

**KELLER FARM MITIGATION BANK
SNOHOMISH COUNTY APPROVAL FOR USE UNDER SCC 30.62A.550**

BACKGROUND

Snohomish County Code (SCC) allows the Director of the Department of Planning and Development Services (PDS) to approve the establishment and use of a wetland, fish and wildlife habitat conservation area or buffer mitigation bank to provide mitigation required by chapter 30.62A SCC. This approval may allow for deviations from the requirements of Parts 100 through 400 of chapter 30.62A SCC with respect to the treatment of wetlands, fish and wildlife habitat conservation areas, or buffers. There currently are three mitigation banks in Snohomish County. The first is the Narbeck Wetland Sanctuary, a bank established by Paine Field Airport in 1997 and the first bank in Washington state. The second is the 220-acre Snohomish Habitat Bank established in 2006 and the first private mitigation bank in Washington state. The third is the Skykomish Mitigation Bank located on the Skykomish River near the City of Monroe.

The County received a request to approve the Keller Farm Mitigation Bank for use under SCC 30.62A.550. The Keller Farm Mitigation Bank is in the City of Redmond on 75.2 acres of land located along Bear Creek. The land is owned by the City of Redmond. The bank sponsor is Habitat Bank LLC. The bank is expected to provide 51.1 acres of re-established wetland area, 7.9 acres of rehabilitated wetland area, 4.3 acres of rehabilitated stream channel and associated wetlands, and 11.9 acres of enhanced riparian upland forested area. The Keller Farm Mitigation Bank was certified by the Washington State Interagency Review Team (IRT) in 2019, which is co-chaired by the Washington State Department of Ecology and the U.S. Army Corps of Engineers.

The bank's approved service area includes portions of Snohomish County within Water Resource Inventory Area (WRIA) 8. In Snohomish County, WRIA 8 includes Swamp Creek, North Creek, Bear and Little Bear Creeks, and coastal streams south of the Snohomish River. The service area for the bank does not include the coastal stream sub-basins. The bank offers mitigation credits to projects with unavoidable aquatic resource impacts within its service area. The Keller Farm Mitigation Bank is the first mitigation bank in WRIA 8, and would be the first bank not located in Snohomish County but whose service area extends into Snohomish County.

PUBLIC REVIEW AND COMMENT

The County is not a member of the IRT that approved the Keller Farm Mitigation Bank. Therefore, use of the bank for development projects within Snohomish County requires separate approval of the PDS Director under SCC 30.62A.550 (Mitigation Banking and In Lieu Fee Program). That provision contains standards and criteria for the use of mitigation bank projects in Snohomish County. Snohomish County PDS staff evaluated the Keller Farm Mitigation Bank Mitigation Banking Instrument (MBI) and concluded it was consistent with SCC 30.62A.550. Appendix A to this approval contains that analysis.

Pursuant to SCC 30.62A.550(3), the Keller Farm MBI, mitigation banking documents, and staff analysis were made available for public review and comment. Public comments were solicited on the PDS website from April 22, 2020, to May 29, 2020.

The County received two comment letters and one email during the public review period. One letter was from Thomas Murdoch of the Northwest Stream Center and the other was from a coalition of environmental groups and private citizens. Those letters are attached as Appendix B to this approval. Habitat Bank LLC provided a response to the coalition's letter, which included a document titled "Keller Farm Mitigation Bank Aquatic Resource Service Area Rationale Document." Habitat Bank LLC's response and the service area rationale document are attached as Appendix C to this approval. Habitat Bank LLC's response addresses most of the issues raised by the Northwest Stream Center due to the overlapping nature of the issues in the two comment letters.

Habitat Bank LLC's response adequately responds to the concerns raised in the two comment letters. PDS staff agrees with analysis provided by Habitat Bank LLC. Below is additional analysis related to the issues raised in the comment letters.

Sections SCC 30.62A.550(2)(b) and (2)(c) address how mitigation banks can be used to offset the impacts of specific development projects to critical areas functions and values. Section 30.62A.550(2)(b) provides:

The use of the mitigation bank will result in equivalent treatment of the functions and values of the wetland, fish and wildlife habitat conservation area or buffer to offset the impacts to critical areas functions and values on the project site such that the total net impact will be no net loss of critical area functions and values in the watershed in which the impacts will occur. For the purposes of this section, "watershed" means an area identified as a state of Washington water resource inventory area (WRIA) under WAC 173-500-040.

The Department of Planning and Development Services determined that compliance with this section was provided in the KFMBI and supporting documentation (see document links).

Section 30.62A.550(2)(c) provides:

The creation and operation of the mitigation bank and development activity which utilizes the wetland, fish and wildlife habitat conservation area or buffer bank, shall not create unmitigated long term or permanent adverse impacts to the critical functions and values of the wetlands, fish and wildlife habitat conservation areas or buffers in the sub-drainage basin in which the impacts will occur. Critical functions and values listed at SCC 30.62A.220 are those that are important to the long-term ecological viability of

the wetlands, fish and wildlife habitat conservation areas
or buffers in the sub-drainage basin.

The sub-drainage basins in Snohomish County includes; Swamp Creek, North Creek, Little Bear Creek and Bear Creek.

The request for use of credits from the Keller Farm MBI will be reviewed at the project level for compliance with the bank use provisions of SCC 30.62.550(2) (c). The review will include an analysis to ensure that the mitigation occurring at KFMB will not cause unmitigated impacts to the “critical functions” of the sub-basin in which the impact is occurring, an issue raised by several commenters.

APPROVAL

The Keller Farm Mitigation Bank was approved and certified by the Washington State Interagency Review Team, co-chaired by the U.S. Army Corps of Engineers and the Washington State Department of Ecology. The Bank meets all the criteria set forth in SCC 30.62A.550(2) for the establishment and use of a mitigation bank in Snohomish County, and is hereby **APPROVED** for use to provide mitigation required by chapter 30.62A SCC for applicable projects.

Barbara Mock
Barbara Mock (Sep 1, 2020 08:22 PDT)

Barb Mock
Director, Snohomish County Department of
Planning and Development Services

Sep 1, 2020

Date

APPENDIX A

This appendix contains an analysis of the Keller Farm Mitigation Bank MBI to document that it is consistent with SCC 30.62A.550. This section of the code is below, along with specific references to sections of the Keller Farm MBI where the requirements have been met for the project. SCC 30.62A.550 references a Memorandum of Agreement (MOU) which is synonymous with a Mitigation Banking Instrument (MBI) as that term is used by the Washington State IRT.

SCC 30.62A.550 Mitigation Banking and In Lieu Fee Program

1) The director may approve the establishment and use of a wetland, fish and wildlife habitat conservation area or buffer mitigation bank to provide mitigation required by this chapter. The director's approval may allow for deviations from the requirements of Parts 100 through 400 with respect to the treatment of wetlands, fish and wildlife habitat conservation areas or buffers.

(2) Criteria for approval of use of mitigation banks:

(a) The following must have been approved by the county and the federal, state and local agencies with jurisdiction:

(i) a memorandum of agreement (MOA) defining guidelines for establishing a wetland, fish and wildlife habitat conservation area or buffer mitigation banking program and an implementation manual establishing a mitigation bank at a specific site; and

This requirement is satisfied through the execution of the Keller Farm MBI (December 2019, Habitat Bank, LLC) by the U.S. Army Corps of Engineers, U.S. EPA, Washington State Department of Ecology, City of Redmond, and other IRT members including the Washington State Department of Fish and Wildlife.

(ii) the MOA and/or implementation manual shall include, but not necessarily be limited to, provisions for the following:

(A) specific criteria and standards for use of the mitigation bank;

This requirement is satisfied by Keller Farm MBI, Appendix E "Procedures for Use of Mitigation Bank Credits and Debits."

(B) methods for tracking credits;

This requirement is satisfied by Keller Farm MBI, Appendix E, Section E.7 "Accounting Procedures."

(C) an interagency oversight committee composed of representatives from each of the agencies with jurisdiction for the purpose of regulatory review and approval of banking activities;

This requirement is satisfied by Keller Farm MBI, Section I.E "Interagency Review Team."

(D) permanent management and maintenance to assure the long-term viability of the bank site;

This requirement is satisfied by Keller Farm MBI, Section III.C "Financial Assurance Requirements," and Keller Farm MBI, Section III.M "Long-Term Management and Maintenance."

(E) professional construction oversight to ensure successful construction of the mitigation bank site;

This requirement is satisfied by Keller Farm MBI, Appendix B "Bank Development Plan and Design."

(F) quantitative and qualitative performance standards;

This requirement is satisfied by Keller Farm MBI, Section V “Responsibilities of the Corps and Ecology,” and Keller Farm MBI, Appendix C “Bank Objectives and Performance Standards.”

(G) systematic compliance and performance monitoring to determine the degree to which the site meets performance standards;

This requirement is satisfied by Keller Farm MBI, Appendix F “Establishment Period Monitoring, Reporting, Maintenance, and Remedial Action.”

(H) a schedule and timeline for compliance and performance monitoring,

This requirement is satisfied by Keller Farm MBI, Appendix F, Table F-2 “Summary of Annual Monitoring Tasks.”

(I) contingency plans;

This requirement is satisfied by Keller Farm MBI, Appendix F, Section F.4 “Remedial Action during the Establishment Period of the Bank.”

(J) methods to be used to determine the functions and values of replacement wetlands, fish and wildlife habitat conservation area or buffers based on a watershed analysis;

This requirement is satisfied by Keller Farm MBI, Appendix D “Credit Generation and Award Schedule.”

(K) provisions for assuring the funding of long-term maintenance of the bank and performance of mitigation and monitoring requirements;

This requirement is satisfied by Keller Farm MBI, Appendix G “Long-Term Protection and Management,” and Appendix H “Financial Assurances.”

(L) a description of wetland, fish and wildlife habitat conservation area or buffer mitigation ratios to be used and justification for these ratios based upon best available science. Mitigation ratios will be based upon consideration of factors including but not limited to the likelihood of success of the mitigation, the types and quality of wetland, fish and wildlife habitat conservation areas or buffers involved, research results, and monitoring results;

This requirement is satisfied by Keller Farm MBI, Appendix E “Procedures for Use of Mitigation Bank Credits and Debits.”

(M) the mitigation plan requirements contained in SCC 30.62A.150;

This requirement is satisfied by Keller Farm MBI, Appendices A-H

Appendix A - General Bank Information

Appendix B - Bank Development Plan and Design

Appendix C - Bank Objectives and Performance Standards

Appendix D - Credit Generation and Award Schedule

Appendix E - Procedures for Use of Mitigation Bank Credits and Debit Use

Appendix F - Establishment Period Monitoring, Reporting, Maintenance and Remedial Action

Appendix H - Financial Assurances

(N) provisions for mitigation sequencing that requires at minimum that all proposals using a mitigation bank shall have made reasonable efforts to avoid and minimize impacts to wetlands, fish and wildlife habitat conservation areas and buffers.

This requirement is satisfied by Keller Farm MBI, Appendix E, Section E.6 “Procedures for Use of Mitigation Bank Credits.”

APPENDIX B

Comment Letters from Northwest Stream Center and Coalition Group



TRANSMITTED BY E-MAIL

May 29, 2020

Randy Middaugh, Principal Planner
Snohomish County Planning and Development Services
3000 Rockefeller Ave., M/S 604
Everett, WA 98201
Randy.middaugh@snoco.org

Subject: Keller Farm Mitigation / Public Comment
Comments Against Regional Mitigation Facilities

The Sno-King Watershed Council (SKWC), the Hilltop Locust Community Group (HLCG), and a number of private citizens have reviewed the documents currently posted on the project website:

<https://www.snohomishcountywa.gov/5625/Keller-Farm>

Documents reviewed for these comments:

- Keller Farm Mitigation Banking Instrument (MBI), dated December 2019; and
- draft Snohomish County Approval form, dated December 2019.

The environmental groups and private citizens signatory to this comment letter strongly object to the Keller Farm Mitigation site, located in King County, being used for any wetland mitigation for Snohomish. Keller Farms is located approximately 7 to 17-air miles away from any potential mitigation site in Snohomish County^{1, 2}.

To be of any mitigation value, the wetland mitigation must be proximal to and within the same Threshold Discharge Area (TDA) as the wetland impact. TDA's are used by Snohomish County for determination of flow control and water quality treatment³. This same concept must also be applied to wetland mitigation. Doing flow control or water quality treatment mitigation 17-miles away from the development impact is not allowed; the same must also hold true for wetland mitigation.

Wetlands provide cleansing and attenuation of stormwater flows, wildlife habitat for amphibians, birds, mammals, insects, and fish species, as well as aesthetic enjoyment by the public. These benefits cannot be mitigated by the purchase of relatively inexpensive property that already contains wetlands, in another drainage basin system, 17-airmiles away from the wetland impacts that are supposed to be mitigated. While developers seek a cheap and easy way to avoid costly, on-site mitigation, we cannot condone this gross misuse of wetland mitigation values.

¹ Reference Attachment 1, Google Earth Map

² Reference Attachment 2, Keller Farms Mitigation Bank, North Service Area

³ Reference Attachment 3, SNOCO Drainage Manual 2017, Vol I, TDA

Swamp Creek, North Creek, Little Bear Creek, and other drainage basins in Snohomish County are each unique drainage basins in its own watershed as defined by SCC30.91W.030; and each stream is known to be used by Chinook salmon and are listed on SNOCO's Critical Area Regulations Update, Snohomish County Chinook Distribution map, February 1, 2016.

Use of the Keller Farm site in King County puts all of Snohomish County's "salmon eggs" in one basket. That is, if at some point in the future, a flood, a tanker truck spill, or any other natural or manmade disaster degrades or destroys the Keller Farm site, any mitigation benefits for salmon will be lost. By dispersing spawning habitats and wetland mitigation sites within Snohomish County and within the same reach of any development impacted stream, we better protect threatened species such as Chinook salmon, preventing them from being listed as endangered, or worse, extirpated from Puget Sound. This impact extends to other species such as our iconic Orca whales in Puget Sound.

To be of benefit, any mitigation should not be more than ¼-mile from the proposed development site. The proposed Keller Farms "mitigation bank" simply cannot provide equivalent treatment of the functions and values of wetland, fish and wildlife habitat conservation, or buffer loss to offset the impacts miles away. The total net impact will result in the loss of critical area functions and values in these watersheds in which the impact occurs and will not meet the requirements of SCC 30.62A.550.

While portions of south Snohomish County are within Water Resource Inventory Area (WRIA 8) they are in entirely separate watershed basins from Keller Farms. The use of WRIA to determine watershed for development mitigation is wholly inappropriate. For instance, portions of WRIA 8 drain into Puget Sound and not into Lake Washington. WRIA 8 extends south beyond Chester Morse Lake, nearly to Mount Rainer. By Snohomish County's logic, a mitigation bank constructed in the Sacramento River valley could be used for Snohomish County wetland impacts, because the Sacramento River is on the western side of the continental divide and drains into the Pacific Ocean.

The proposed Keller Farms site does not address impacts to the City of Kenmore and Bothell from upstream development without wetland protection. For instance, in the City of Kenmore appealed DNS 15-003 to upsize an 18-inch culvert on Airport Road to a 36-inch culvert without compensating detention⁴. As a part of its appeal, the City of Kenmore estimated that it spends over \$100,000 annually at a surface water facility located in Swamp Creek just downstream of the Snohomish County border to remove sediment and debris from the stream resulting from the excessive flows caused by runoff created in Snohomish County. A memorandum of agreement between the City of Kenmore and Snohomish County required the construction of a restricting orifice plate to be installed such that the flow not exceed that of the replaced 18-inch culvert. That orifice plate⁵ remains in place today because Sno-King Watershed Council successfully appealed the County's efforts to convert a Category II wetland known as Wetland ERR into a detention pond for the Paine Field Airport. Under the County's proposed ordinance, this wetland would be lost with non-effective mitigation in another county, over 17-airmiles away.

Use of the Keller Farm site will likely result in appeals and other legal actions for any project that attempts to take credit for a wetland or wetland buffer loss that is more than ¼-mile away.

⁴ Reference Attachment 4 SNOCO-Kenmore-MOU

⁵ Reference Attachment 5, Photo Orifice Plate, October 30, 2015

Snohomish County cannot be allowed to “trash” Swamp Creek, North Creek, Little Bear Creek and other waterbodies in Snohomish County, simply to expedite development at the expense of the environment. If required wetland mitigation cannot be achieved within the same TDA as the project impacts, then that project should not be approved.

Thank you for your consideration of these comments.

Respectfully submitted,
Environmental Groups:



William Lider, PE, Board Member
Sno-King Watershed Council
Bill@LiderEngineering.com

ss. _____
Randall Whalen
President, BCHW
randy@bearcreekhw.org

Private Citizens:

ss. _____
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Brian Zinke, Executive Director
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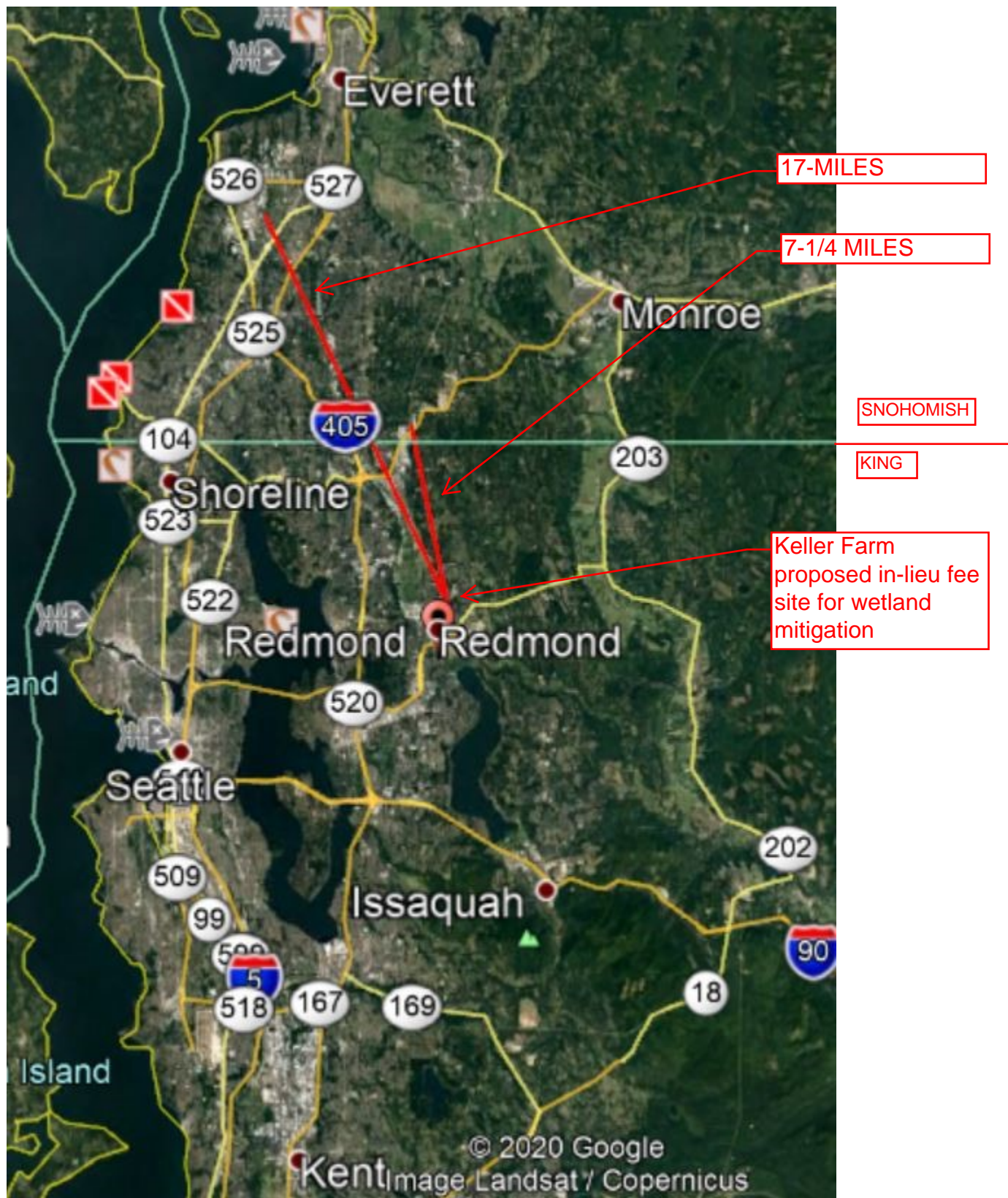
ss. _____
Jolene Teeters
jolene@jrwalshlaw.com

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Lyanivette Rosado Perez
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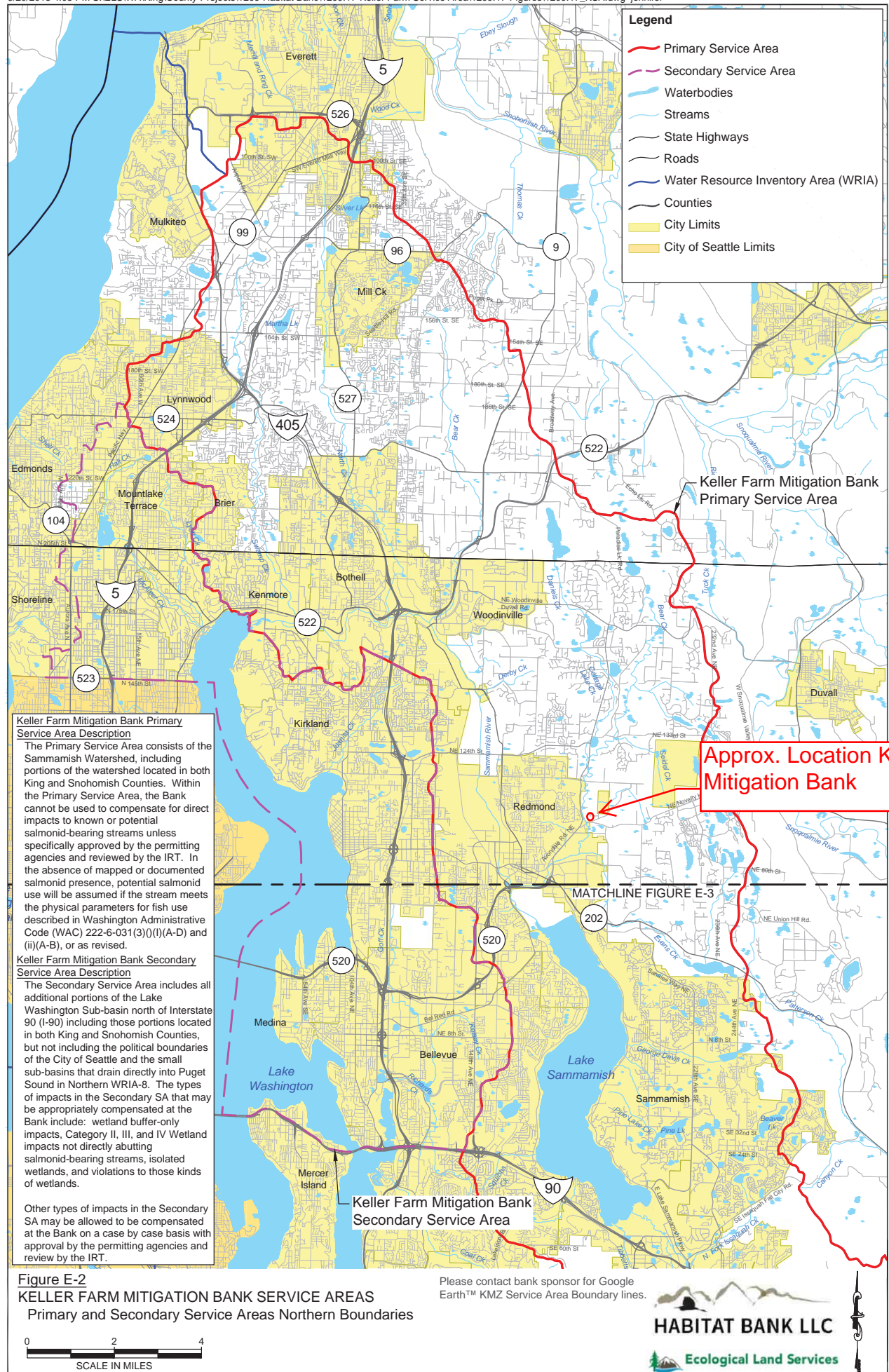
ss. _____
Jessica Salazar & Roberto Salazar
schelljess77@yahoo.com

Attachment 1 - Google Earth Map
Attachment 2 - Keller Farms Mitigation Bank, North Service Area
Attachment 3 - SNOCO Drainage Manual 2017, Vol I, TDA
Attachment 4 - SNOCO-Kenmore-MOU
Attachment 5 - Photo Orifice Plate, October 30, 2015

cc: SKWC Board, County Executive, County Council, Barbara Mock, PDS
Environmental Organizations & Private Citizens Listed Above



THE DISTANCE FROM THE KELLER FARMS MITIGATION BANK VARIES FROM APPROX. 7-MILES TO 17-MILES AWAY FROM ANY POTENTIAL WETLAND IMPACTED IN SNOHOMISH COUNTY FROM DEVELOPMENT.



Surface and stormwater management system

Drainage facilities and any other natural features that collect, store, control, treat and/or convey surface and stormwater.

Suspended solids

Organic or inorganic particles that are suspended in and carried by the water. The term includes sand, mud, and clay particles (and associated pollutants) as well as solids in stormwater.

Swale

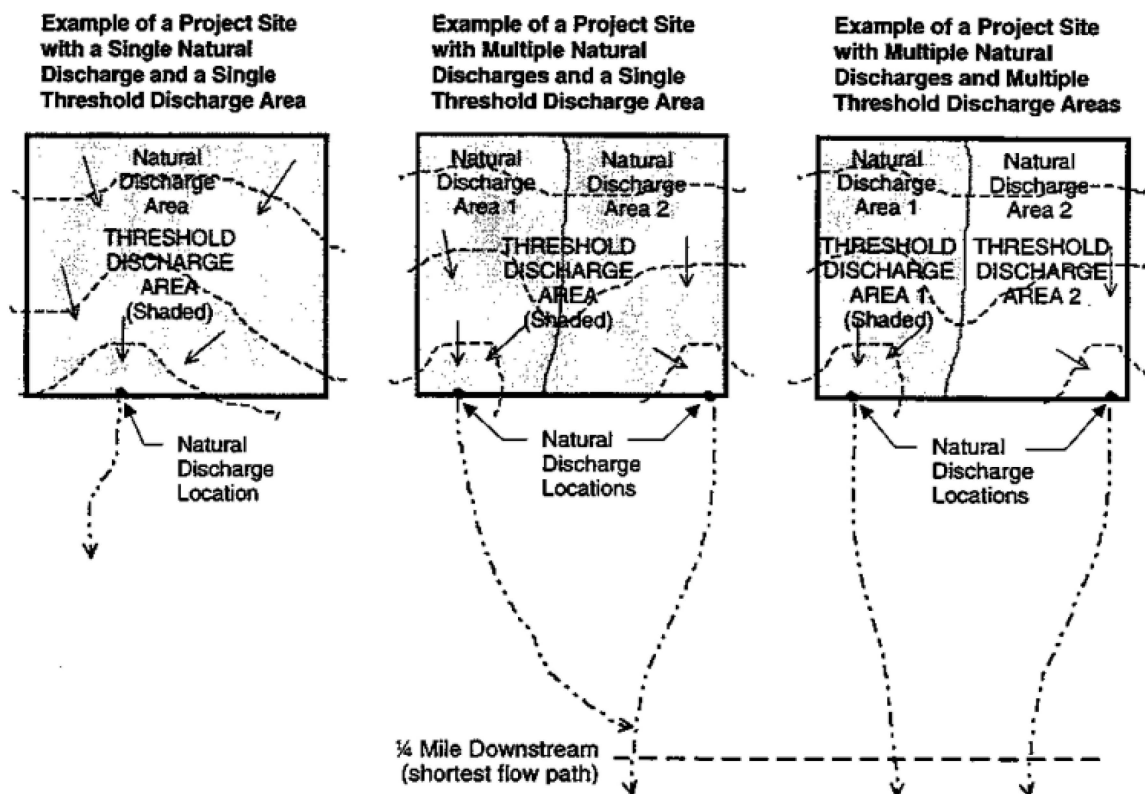
A shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.

Terrace

An embankment or combination of an embankment and channel across a slope to control erosion by diverting or storing surface runoff instead of permitting it to flow uninterrupted down the slope.

Threshold discharge area

An onsite area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream as determined by the shortest flowpath. See figure below.



**Memorandum of Understanding
Between
The City of Kenmore
And
Snohomish County Airport**

This Memorandum of Understanding is entered into this 13th day of April, 2015 by and between the Snohomish County Airport "Airport" and the City of Kenmore "City".

Recitals

WHEREAS, the City is at the downstream most end of the Swamp Creek basin and has a history of damages resulting from flooding and sedimentation issues, and

WHEREAS, Swamp Creek is identified as a Flood Problem Flow Control Area in the City, and

WHEREAS, the Airport is installing a new 36-inch pipe under Airport Road that discharges runoff from Airport property (sub-basin SC-5) to adjacent wetlands and ultimately Swamp Creek which is described in the Airport's DNS File No. 15-003, and

WHEREAS, the City appealed the Airport's DNS File No. 15-003 on March 23, 2015, and

WHEREAS, the Airport is prepared to implement the Central Ramp – Wetland ERR Enhancement and Detention Project to provide flow control for runoff from sub-basin SC-5, which is expected to be completed in September 2015; and

WHEREAS, Airport officials have stated that applicable permit applications with the Army Corp of Engineers, Department of Ecology and Snohomish County for the Central Ramp – Wetland ERR Enhancement and Detention Project are nearly complete with unofficial agreement from each agency at the time of this MOU.

NOW, therefore, by the mutual covenants and conditions of this Memorandum, both parties hereby agree to the following:

1. Purpose.

The purpose of this Memorandum of Understanding is to formalize the terms of understanding between the City of Kenmore and the Snohomish County Airport with respect to the City's appeal of the Airport's DNS File No. 15-003. It is the Airport's desire that the City withdrawal the appeal and the City has agreed to withdrawal the appeal based on the following items of understanding.

2. Items of Understanding

A. The Airport shall:

1. Install a flow restrictor plate on the new 36-inch pipe that mimics flow conditions currently provided by the existing 18-inch pipe.

2. Leave the flow restrictor in place until final completion of the Central Ramp – Wetland ERR Enhancement and Detention Project.

B. The City shall:

1. Withdraw its appeal of Snohomish County Airport's DNS File No. 15-003.
2. Not file any administrative or judicial appeals of any issued permits that relate to Snohomish County Airport's DNS File No. 15-003 or the project described therein to construct a 36-inch pipe under Airport Road.

3. Designated Managers and Point of Contact(s).

The designated managers for implementation and coordination of this MOU will be Bill Dolan or subsequent Airport Director for the Snohomish County Airport and Kris Overleese or subsequent Public Works Director for the City of Kenmore.

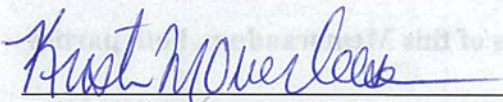
4. Amendments.

This MOU may be modified or amended by written agreement among the two parties of this MOU.

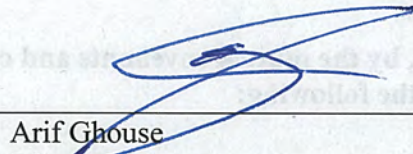
5. Termination

This MOU will expire upon completion of project "Central Ramp – Wetland ERR Enhancement and Detention Project" unless renewed by mutual agreement of the parties. This MOU may be terminated at any time by mutual agreement of both parties.

IN WITNESS WHEREOF, the parties hereto have caused this MOA to be executed by their respective representative(s):



Kris Overleese
Public Works Director
City of Kenmore



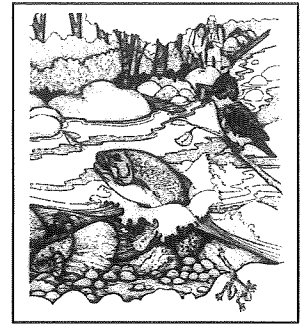
Arif Ghose
Director
Snohomish County Airport

4/13/15
Date

04-09-2015
Date



Northwest Stream Center
600 - 128th Street SE
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tel: 425-316-8592, 771-6671
fax: 425-338-1423
email: aasf@streamkeeper.org
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May 15, 2020

Randy Middaugh, Principal Planner
Snohomish County Planning and Development Services
3000 Rockefeller Ave., M/S 604
Everett, WA 98201

Subject: Keller Farms Mitigation Instrument

Mr. Middaugh,

I am writing this letter to you from the Adopt A Stream Foundation's Northwest Stream Center (NWSC) in McCollum Park. As you know, North Creek flows through the NWSC grounds from South Everett through Mill Creek and Bothell in route to the Sammamish River and Lake Washington. North Creek's surrounding watershed is approximately 30-square miles.

On May 15, 2019, North Creek stream flow went dry as it entered McCollum Park ¼ mile upstream from the NWSC. The creek remained dry from the park 2.5 miles upstream to its headwaters north of Everett Mall Way and McGill Ave until a big thunderstorm event and accompanying heavy rains on September 7, 2019. According to City of Everett Surface Water Manager, Heather Griffin, that was the earliest that North Creek's headwaters went dry and the longest duration to date.

There are many reasons why this once perennial 12.6-mile long salmon stream's headwaters went dry, but they can be collectively labeled as poorly planned development. From a natural resource perspective major casualties that resulted include: lost forest cover, shrunk riparian zones, and filled wetlands. North Creek's once abundant Chinook, Sockeye, Coho, Steelhead, and resident and sea-run cutthroat trout populations are also casualties.

During our recent telephone discussion, you advised that the proposed Keller Farm Mitigation Bank is to provide a means to offset unavoidable loss of wetlands caused by new development activities that cannot be mitigated at those locations. I appreciate that intent.

However, the Keller Farm Mitigation Bank is located in the Bear Creek watershed east of Redmond. Purchase of Keller Farms "wetland shares" by a developer causing loss of wetlands in the North Creek watershed equates to a net loss of wetlands in the North Creek watershed.

Furthermore, development caused loss of wetlands in the Snohomish County portion of the Bear Creek watershed cannot be offset with the purchase of shares in Keller Farms wetlands in King County. Keller Farms wetlands are too far downstream in that watershed to provide an actual ecological benefit to the upper Bear Creek watershed in Snohomish County.

In order for a wetland mitigation bank to offset the ecological functions of lost or degraded wetlands, that bank has to be located in close proximity to the lost or degraded wetland location. That bank also has to provide the functions of the lost/degraded wetland including: water storage, water pollution filtration and wildlife habitat. In the case of heavily urbanized watersheds like North Creek, any incremental loss of wetlands results in a significant adverse environmental impact.

Too often wetland banks transition from their original intent into an easy means for a developer to make a "deposit" of cash into that bank in exchange for an ecological function "withdrawal" from a separate watershed that may not recover from loss of that ecological function. In my opinion, the Keller Farm Mitigation Banking Instrument does just that.

As we discussed recently, and many times in the past, there are many more ecologically sound options for Snohomish County to pursue.

One option that I have advocated for years is for Snohomish County to develop a watershed management plan for each watershed that identifies ecologically essential areas that need to be preserved in order for each watershed to maintain its current ecological functions and means to ensure the protection of those essential lands including:

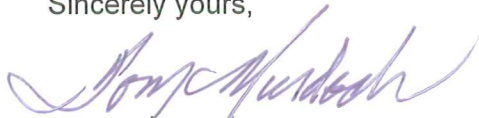
- Securing remaining identified ecologically essential areas through fee simple purchase and conservation easements.
- Establishing a functional transfer of development rights program.
- Down-zoning ecologically essential areas to what used to be categorized as "watershed site sensitive" lands not to be developed.

Unfortunately, all of the above require considerable investment in social capital and political will. Setting up a mitigation bank is a much less complex process. However, a "bank" like the Keller Farm will not benefit North Creek or the adjacent Snohomish County watersheds that flow into the Sammamish River.

In conclusion, I find that the Keller Farms Mitigation Bank Instrument will be very beneficial to the developers, both private and public. However, it will provide no ecological benefits to North Creek, Swamp Creek, Little Bear Creek, or the upper 70% of the Bear Creek watershed. This County sponsored action also indicates to the public, that the County is not willing to invest in the necessary social capital or provide the political will necessary to protect the watersheds in the most rapidly developing portions of Snohomish County.

The proposed code change should not occur. Any mitigation for wetland loss must occur within the same watershed and in close proximity of the degraded area. Otherwise, Snohomish County is not meeting its own "no net loss" philosophy.

Sincerely yours,



Thomas B. Murdoch
Executive Director

CC: Executive Dave Somers & County Council

APPENDIX C

Response to Comment Letters from Habitat Bank LLC

and

Keller Farm Mitigation Bank Aquatic Resource Service Area Rationale Document

Keller Farm Mitigation Bank

Aquatic Resource Service Area Rationale Document



Bank Sponsor:



Report prepared by:

Jennifer Thomas

Water Land Natural Resource Consulting, LLC

December 21, 2015

Executive Summary

This document was prepared as part of the “Keller Farm Mitigation Bank Project” proposal, which is currently being reviewed by Washington State’s Interagency Bank Review Team (IRT). The bank sponsor is Habitat Bank LL. (HB). The Keller Farm Mitigation Bank Property is an approximately 90-acre site located within “Water Resource Inventory Area (WRIA) 8” at the confluence of Bear and Evans Creeks in the City of Redmond, Washington.

The process for the establishment and use of mitigation banks is presented in federal and state rules, and local policies, and will be discussed in greater detail within the document. The first step in the mitigation bank permitting process is submittal of a formal Prospectus by the bank Sponsor. A Prospectus for the Keller Farm Mitigation Bank was submitted by HB in March, 2015, to the IRT. Following review and revisions at the request of the IRT, a Prospectus was issued for public comment, and the IRT met on September 17, 2015, to discuss the Prospectus and discuss comments received during the Public Notice period.

The Prospectus has proposed an aquatic resource mitigation and conservation bank, under both the authorities of the federal Clean Water Act, and the Endangered Species Act and additional directives from federal, state and local agencies acknowledging the need and prioritizing the development of mitigation bank projects. The Muckleshoot Indian Tribe (MIT), who has usual and accustomed tribal treaty rights in the region, including the area in which the bank site is located, has objected to the conservation bank proposal. HB is responding to the objections of the MIT and other requests for more information by IRT members by providing additional technical information on the service area rationale and status of the WRIA 8 watershed in this document.

The service area rationale portion of this document is prepared for the Keller Farm Mitigation Bank proposal to specifically address permitted, adverse impacts to wetlands and aquatic resources in compliance with the Clean Water Act, and the federal rule on Compensatory Mitigation for Impacts to Aquatic Resources (33 CFR Parts 325 and 332) as well as the Washington State Rule on Wetland Mitigation Banks (WAC 173-700). The document also provides further information on WRIA 8 watershed conditions and salmonid use of WRIA 8, as requested by IRT members at the September 17th IRT meeting. The proposed service area is shown in Figure 1, (Keller Farm Mitigation Bank Proposed Aquatic Resource Service Area) and encompasses approximately 74% of WRIA 8. The primary basis for the proposed service area is ecological; the portion of WRIA 8 within the service area roughly corresponds to that portion of WRIA 8 that falls within the Puget Lowlands (Franklin & Dyrness, 1973, Booth et al, 2003). This area is unified by common geology, topography, climate, soils, habitat types, and species.

This service area also encompasses all of the Urban Growth Areas within WRIA 8. WRIA 8 is the most developed and populous watershed in the state, with 27 jurisdictions and over 1.4 million inhabitants (NWIFC, 2012). Over 55% of the WRIA is within Urban Growth Boundaries. Mitigation opportunities are very limited across the watershed and the Keller Farm Mitigation Bank provides an opportunity to establish a relatively large, ecologically successful mitigation site within the urban growth area that can contribute to regional restoration goals identified for WRIA 8.

Section 1.0 Introduction

Mitigation banks are a form of compensatory mitigation allowed by federal and state rules. A key element of any mitigation bank is the designated service area, or the ‘geographic area within which impacts can be mitigated at a specific mitigation bank...’ (33 CFR Part 332). This document presents a technical rationale for the service area proposed for the Keller Farm Mitigation Bank that is intended to comply with federal and state guidance, as well as local plans, codes and policies.

Because both the federal rule and the state rule and guidance on service areas rely primarily on ecological factors such as watershed boundaries, the following documents were reviewed to inform the Keller Farm Mitigation Bank service area:

- Bear Creek Basin Plan, King County, 1990, adopted 1992, amended, 1995
- Citywide Watershed Management Plan, City of Redmond, 2013
- Relevant City of Redmond Plans and Policies – (Comprehensive Plan (Redmond, 2011), Citywide Watershed Management Plan (Redmond, 2013a), Water Resources Management Plan (Redmond, 2013b), Parks Plan (Redmond, PARCC 2010) Shoreline Master Program, Critical Areas code and Fish and Wildlife Habitat Conservation Areas code (Redmond Zoning Code, 2015). Puget Sound Watershed Characterization – WRIA 8, Stanley et al, 2011

Because the proposed service area is also unified by common hydrologic flow, common geology, climate, topography, soils, vegetation communities, and habitat types the following documents were also reviewed:

- Geology of the Puget Lowlands, Booth et al. 2003
- Franklin and Dyrness, Vegetation of Oregon and Washington, 1973, 1988
- NRCS Soil Survey for King County
- A Preliminary Classification of Wetlands of Western WA, Kunze, 1994
- A Field Guide to Washington’s Ecological Systems, Rocchio and Crawford, WDNR, 2009

In addition, the Lake Washington/Cedar/Sammamish Watershed also provides a migratory pathway for salmonids, a regionally significant species. The 2005 Puget Sound Salmon Recovery Plan notes: “Hydrology is recognized as the most important factor in the ecological processes that create and sustain aquatic habitat.” (PSSRP, 2005). The Keller Farm Mitigation Bank site is located within the Bear Creek sub-basin, which is hydrologically connected to the Cedar/Sammamish/Lake Washington Watershed, designated as WRIA 8. Because there are significant opportunities to restore salmonid habitat at the mitigation bank site, relevant sections of the following documents were also reviewed to inform the technical basis and understanding of fish presence and habitat preferences by salmonid species, both at the bank site and within the watershed.

- State of our Watersheds, (Northwest Indian Fisheries Commission, 2012).
- Salmon and Steelhead Limiting Factors for WRIA 8 (Kerwin, 2001).
- Puget Sound Salmon Recovery Plan, 2005 (PSSRP, 2005).
 - Volumes I and II
- 2014 3 Year Salmon Recovery Habitat Work Plan for WRIA 8 (WRIA 8, 2014a).
- 2014 WRIA 8 Monitoring and Adaptive Management Project (WRIA 8, 2014b).

This document is organized as follows:

- 1) Service area guidance from federal and state rules on wetland mitigation banks
- 2) Watershed Plans and local codes and policies
- 3) Ecological conditions on which the service area is based
 - a. Wetlands in the Puget Lowlands
 - b. Species of Regional Significance: Salmon
- 4) Summary and Conclusion

Section 1.1 Regulatory Overview

Section 1.1.1 Federal and State Rules on Service Area

Wetlands are defined in federal and state statutes. At the federal level, wetlands are primarily regulated under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers (Corps) with oversight authority by the United States Environmental Protection Agency (USEPA). At the state level, wetlands are regulated under the authority of the Washington Department of Ecology (Ecology), which regulates waters of the state, including wetlands. At the local government level, wetlands are regulated by Cities and Counties in compliance with state and federal regulations, as well as Critical Areas Ordinances under Washington state's Growth Management Act (RCW 36.90A) and the State Environmental Policy Act (SEPA, RCW 43.21 and WAC 197-11). Impacts to wetlands must be offset through a regulatory process called mitigation, which is also a defined process at the federal, state, and local level. At the federal level, wetland mitigation is required to follow the federal rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332). In Washington State, Wetland Mitigation Banking is established by statute (RCW 90.84) and was found by the Legislature 'to be an important regulatory tool for providing compensatory mitigation for unavoidable impacts to wetlands and declares it the policy of the state to support wetland mitigation banking [by adoption of a state rule to guide the mitigation bank certification process].' (WAC 173-700-100(1)).

Wetland mitigation banking is allowed by City of Redmond code, and the Keller Farm Mitigation Bank has been zoned specifically for the establishment of a mitigation bank, in compliance with state and federal regulations that govern the process.

Mitigation banks are a form of consolidated mitigation in that one site can provide approved mitigation for multiple permitted wetland impacts. Permitting a mitigation bank is a rigorous process, and must follow procedures as outlined in federal and state rules, and in compliance with local codes and policies. The federal rule prioritizes the use of banks as the preferred form of mitigation. The preamble to the rule states: *"We recognize that mitigation banking is an important tool for compensatory mitigation. In this final rule we have established a preference for mitigation bank credits, since mitigation banks must have an approved mitigation plan and other assurances in place before mitigation credit can be provided to permittees (see Section 332.3(b)(2) (Federal Register, 2008, V 73, No 70. page 19605). Further support is given to mitigation banks as the preferred form of mitigation "...we have established a preference hierarchy in 332.3(b) that will ensure that mitigation options with the highest likelihood of success and greatest value to the watershed will be selected from the available choices."* (Federal Register, 2008, V 73. No 70. p.19614).

One of the most important considerations when establishing a mitigation bank is the service area determination. The federal rule defines the service area as: “...*the geographic area within which impacts can be mitigated at a specific mitigation bank...as designated in its instrument.*” (33 CFR Part 332.2 Definitions).

The federal rule includes further discussion of the service area as: “*The service area is the watershed, ecoregion, physiographic province, and/or other geographic area within which the mitigation bank...is authorized to provide compensatory mitigation required by DA permits. The service area must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area. For example, in urban areas, a U.S. Geological Survey 8-digit hydrologic unit code (HUC) watershed or smaller watershed may be an appropriate service area. In rural areas, several contiguous 8-digit HUCs or a 6-digit HUC watershed may be an appropriate service area. Delineation of the service area must also consider any locally developed standards and criteria that may be applicable. The economic viability of the mitigation bank...may also be considered in determining the size of the service area.*” (33 CFR Parts 325 and 332).

Washington State’s rule defines the term ‘service area’ very similarly to the federal rule definition as “...*the designated geographic area within which the bank can be reasonably expected to provide appropriate compensation for unavoidable impacts.*” (WAC 173-700-104 Definitions). In addition to this definition, Washington State has developed a Washington State Wetland Mitigation Bank Service Area Guidance document (Ecology, Washington State Wetland Mitigation Bank Service Area Guidance, undated document), which closely follows the state rule, but provides additional information with respect to service area considerations.

According to the federal rule, service areas must follow a watershed-based approach, which the rule expands upon at some length. “*The primary objective of the watershed approach ...is to maintain and improve the quantity and quality of wetlands and other aquatic resources in watersheds through strategic selection of compensatory mitigation project sites. The watershed approach accomplishes this objective by expanding the informational and analytic basis of mitigation project site selection decisions and ensuring that both authorized impacts and mitigation are considered on a watershed scale rather than only project by project.*” (Federal Register, 2008. V 73. No. 70. p. 19598).

And while the federal rule places considerable emphasis on the watershed-based approach, it also notes that: “*Mitigation banks...must be sited in such a way as to effectively replace lost aquatic resource functions and services and address key watershed needs within their service areas. **However, consideration of economic factors is also important in determining the service area, to make it possible for third-party mitigation sponsors to develop and implement those projects. If service areas are too small to support economically viable mitigation banks...then we would have to rely on permittee responsible mitigation...[which] is generally less likely to be a successful source of mitigation. ...economic factors should not supercede ecological considerations in the final service area determination***” (Federal Register, 2008. V 73. No 70. p. 19614). The preamble to the rule continues: “*We believe it is necessary to allow economic factors to be taken into account, so that the environmental benefits of third-party mitigation discussed in Sections 332.3(a) and (b)...can be realized. Banks will only be established if the prospective sponsor believes that there will be enough business to justify the initial investment of time and financial resources.*” (Federal Register, 2008. V 73. No 70., p. 19654, emphasis added).

In November of 2015, President Barack Obama issued a Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (available on-line at: <https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related>). In his Memorandum, which is directed at federal agencies, including the Department of Defense, the Department of the Interior, the Secretary of Agriculture, and the Administrators of the USEPA and NOAA, the President states:

“Large-scale plans and analysis should inform the identification of areas where development may be most appropriate, where high natural resource values result in the best locations for protection and restoration, or where natural resource values are irreplaceable. Furthermore, because doing so lowers long-term risks to our environment and reduces timelines of development and other projects, agency policies should seek to encourage advance compensation, including mitigation bank-based approaches, in order to provide resource gains before harmful impacts occur. The design and implementation of those policies should be crafted to result in predictability sufficient to provide incentives for the private and non-governmental investments often needed to produce successful advance compensation. ...

To the extent allowed by an agency's authorities, agencies are encouraged to pay particular attention to opportunities to promote investment by the non-profit and private sectors in restoration or enhancement of natural resources to deliver measurable environmental outcomes related to an established natural resource goal...” (Presidential Memorandum, 2015).

In compliance with the federal rule, and the Presidential Memorandum cited above, the service area for the Keller Farm Mitigation Bank should include both ecologic and economic considerations. The Keller Farm Mitigation Bank project creates an opportunity to use private sector funds to support public sector regional restoration goals. In this regard, the project complies with both the federal rule on compensatory mitigation, as well as the Presidential Memorandum.

And, while the federal rule and Presidential Memorandum highlight both an economic and ecologic basis for mitigation bank site selection, the Washington state rule places a priority on ecological factors as a determinant of service area considerations. The guidance states: *“...service area boundaries are primarily driven by ecological factors such as watershed boundaries or other types of technical information deemed appropriate by the IRT.”* (Ecology, Service Area Guidance Document).

For this reason, much of the rationale for this bank's service area focuses on ecological factors in the watershed, as reflected by watershed plans (and other relevant ecological information) which identify restoration of the Keller Farm Mitigation Bank site as a high priority regional restoration site in the context of both process-based watershed restoration and salmon recovery. Ecology's guidance on bank service areas reiterates the elements listed in the state rule as considerations (WAC 173-700-302 Considerations for determining service area) for determining a mitigation bank service area (WAC 173-700-302). Those elements are reproduced below:

- i. The functions provided at the bank site, and the distance from the bank that the ecological functions can reasonably be expected to compensate for impacts;
- ii. Whether the bank addresses existing watershed-based mitigation planning efforts;
- iii. How far the ecological and hydrological benefits of the bank extend beyond the bank site location;

- iv. The position of bank within the watershed;
- v. The degree to which the bank restores processes within the watershed;
- vi. The size and characteristics of the Water Resource Inventory Area (WRIA) in which the bank is located;
- vii. The quality, diversity, and regional significance of the habitats provided
- viii. Local needs and requirements (such as consistency with land use or watershed management plans);
- ix. The types of impacts that may be compensated through use of credits from the bank; and
- x. The degree to which the bank supports priorities found in, but not limited to, watershed management plans, watershed characterizations, wetland mapping or inventories, stormwater management plans, Shoreline Master Programs, salmon recovery plans and Comprehensive Land Use Plans.

In addition to the Service Area Considerations detailed above, the state rule does allow for the consideration of ecological design incentives at WAC 173-700-300. Specifically, the rule states:

(1) One goal of this chapter is to encourage the development of banks that provide significant ecological benefits and are sustainable. In order to achieve this, incentives have been built into the certification and bank establishment process to encourage the siting and designing of banks that provide significant ecological benefits and restore watershed processes in areas identified as high priorities under a watershed-based approach to mitigation.

(2) The incentives may include, but are not limited to, more favorable credit conversion rates and larger service areas.

(3) The department shall make decisions regarding the application of specific incentives on a case-by-case basis.

This is a significant consideration, given that every watershed plan reviewed as a part of this document going back to the 1980's, identifies the Keller Farm as a 'highest priority' restoration site. We believe that this meets the criteria identified in WAC 173-700-300 (1) above, and request that the IRT take this into consideration as they review the service area rationale for the project.

Section 1.1.2 Local Government - City of Redmond

The Keller Farm Mitigation Bank site is located within the City of Redmond, in King County, Washington. Local governments such as the City of Redmond implement land use regulations, which control the type and intensity of development within a given jurisdiction. Local governments within Washington State regulate their environmental resources, such as streams and wetlands, in compliance with state and federal statutes and rules. Within Washington State, the primary statutes governing local land use are the State Environmental Policy Act (SEPA, RCW 43.21, WAC 197-11), the Growth Management Act (RCW

36.70A and rules¹), and Shoreline Master Programs, which are implemented consistent with the state's Shoreline Management Act (RCW 90.58).

Under the Growth Management Act, jurisdictions planning under the Act are required to adopt Comprehensive Plans, which identify the jurisdictions' vision for the future, for both the built and natural environment. The City of Redmond adopted its Comprehensive Plan in 2011 (City of Redmond, 2011). The Comprehensive Plan establishes the jurisdiction's goals, consistent with the goals as stated in the Growth Management Act, and allows the City to chart a path for growth through the year 2030. The City of Redmond's Comprehensive Plan includes numerous goals in the Natural Environment, Water Quality, and Parks and Recreation Elements that directly support establishment of a wetland mitigation bank at the proposed bank site (each Element of the Comprehensive Plan is a subject-specific chapter).

The City's planning goals are further specified in plan documents which establish the budget and project priorities of the City's departments for the near term planning horizon, as defined by each plan. The City's Water Resources Strategic Plan (Redmond, 2013b) and PARRC Plan (Redmond, 2010) are also consistent with the Citywide Watershed Management Plan, which establishes Bear Creek as a "Highest Restoration" watershed, and identifies specific site rehabilitation strategies for the proposed bank site (Redmond, 2013a). The Citywide Watershed Plan was also developed in consultation with the Muckleshoot Tribe, who has Tribal Treaty Rights in the region, as does the Suquamish Tribe. Other Tribes with interests in the region include the Tulalip Tribe, the Stillaguamish Tribe, and the Snoqualmie Tribe. Washington Department of Fish and Wildlife (WDFW) was also consulted in the development and review of the Citywide Watershed Plan, and is supportive of the watershed-based approach to restoration, and the Plan overall. In addition, the Washington State Department of Ecology (Ecology) is supportive of the City's approach to watershed planning (Redmond, 2013a). Furthermore, the proposed bank site is within the designated Bear Creek Design District 2, and identified as a Core Preservation Area in compliance with City of Redmond's Fish and Wildlife Habitat Conservation Areas code, as a part of the City's adopted Critical Areas Ordinance under the GMA (RZC 21.64.020.A.2.a). Bear Creek and Evans Creek are both designated as Class I streams by the City, while Perrigo Creek, which flows onto the site from the west, is designated as a Class II stream (RZC 21.68)

The planning approach taken by the City of Redmond is a holistic and integrated approach that reflects the best available science, and seeks to manage the driving ecological processes that establish and sustain habitats which in turn are used by species within the City. The Citywide Watershed Management Plan is hierarchical, and aims to restore hydrologic processes as well as hydraulic, geomorphic, physiochemical and biologic aspects of the watersheds within the City's jurisdiction. The proposed bank site is consistent with the City's holistic approach to watershed management, and is one of many such projects that the City is undertaking. Combined, these projects chart a path to achieving the City's goal of sustainable restoration, and restored surface waters by the year 2060 (Redmond, 2013a).

¹ See WAC 365-185; WAC 365-190; WAC 365-195; WAC 365-196; and <http://www.commerce.wa.gov/Services/localgovernment/GrowthManagement/Pages/LawsRules.aspx>

Section 2.0 Watershed Plans

Section 2.1 Lake Washington/Cedar/Sammamish Watershed Overview

The Keller Farm mitigation bank site is located within the Lake Washington/Cedar/Sammamish Water Resource Inventory Area (WRIA) 8, as designated by RCW 90.82 (Figure 1). The Water Resource Inventory Areas (WRIAs) were designated by the state of Washington in 1970 to establish common drainage boundaries as the basis for watershed planning by local and state governments (WAC 173-500). The WRIA boundaries were updated in 1998 and 2000 (Ecology, 2000). WRIA 8 encompasses 686 square miles (Ecology, 2000). Of this area 607 square miles are within the Cedar River/Lake Washington watershed, which enters into Lake Washington along its southern shores within the City of Renton. The Sammamish Watershed, including Issaquah Creek and other tributaries to Lake Sammamish encompasses 240 square miles within WRIA 8. Lake Sammamish and its tributaries make up 97 square miles of this area, Bear Creek and its sub-basin encompass 50 square miles, Little Bear Creek, Swamp, and North Creeks encompass 67 square miles, and 26 square miles of the Sammamish Watershed are in small sidewall streams in the valley floor (Kerwin, 2001).

WRIA 8 is the most urbanized of all of the watersheds in Washington State. It includes 27 jurisdictions (2 Counties, King and Snohomish, and 25 incorporated cities). The area supports 1.4 million residents. More than half of the watershed (55%) is located within Urban Growth Areas (NWIFC, 2012, p 109).

The Lake Washington/Cedar/Sammamish Watershed contains two major river systems (the Cedar River and the Sammamish River) and three large lakes – Lake Washington, which connects to the Puget Sound through the Ballard Locks, Lake Sammamish, and Chester Morse Lake, which contains the impounded headwaters of the Cedar River. Lake Washington has over 80 miles of shoreline, in addition to 30 miles of shoreline around Mercer Island (PSSRP, 2005). Lake Washington is the second largest natural lake in the state. Lake Washington is connected to the Puget Sound through the Ballard Locks, which were constructed in the early 20th century. Construction of the locks greatly altered the naturally occurring river systems by dropping the levels of Lake Washington approximately 9 feet, and cutting off the source of the Black River, which, until that time, flowed south out of Lake Washington into the Duwamish River and Elliott Bay.

Lake Sammamish receives tributary waters both from the north and south; the main drainages within the watershed include Issaquah Creek and its tributaries to the south, and Bear Creek and its tributaries to the north. Lake Sammamish drains north into the Sammamish River, flowing north and west through the Sammamish River valley from which it flows into the northeastern portion of Lake Washington. The Sammamish River was ditched and straightened throughout the 20th century to prevent flooding and to provide fertile valley floor soils to support local agriculture.

The Cedar River runs from the crest of the Cascades, reaching elevations just above 5,000 feet, south through the incorporated towns of Maple Valley and Renton, where it flows into the southern shores of Lake Washington. The waters of the Cedar River join those of the Sammamish at Lake Washington. The Cedar River was dammed at the turn of the 20th century by the City of Seattle to provide for the City's drinking water supply. Above the dam, the headwaters of the Cedar River are known as Chester Morse Lake. Access to the lake is controlled by the City of Seattle, which purchased the headwaters of the Cedar River around the turn of the 20th century. Much of the Cedar River was leveed throughout the 20th century to curtail flooding in the valley.

The western boundary of the Lake Washington/Cedar/Sammamish watershed extends to the shores of the Puget Sound and includes several small tributary streams that drain directly to the Sound. The watershed supports a wide variety of native and non-native aquatic species. Salmonid species within the watershed include: Chinook, coho, kokanee, sockeye, steelhead, bull trout, rainbow trout and coastal cutthroat trout. The main drainages of significance to salmonid populations in the watershed include those of Lake Sammamish and its tributaries, including Issaquah Creek to the south, and Bear Creek and its tributaries to the northeast, as well as the Cedar River populations (PSSRP, 2005).

Washington State's Mitigation Bank Service Area Guidance notes that, "For western Washington, the WRIA is typically the maximum extent of a service area in which a bank is located." (Ecology, Service Area Guidance). For the Keller Farm Mitigation Bank, the proposed service area represents approximately 74% of WRIA 8, and is that portion of WRIA 8 that roughly corresponds with the Puget Lowlands, excluding the Cedar River watershed owned by the City of Seattle (an area of 90,000 acres, see Figure 1). The proposed service area roughly correlates to that portion of the northern Puget Lowlands within WRIA 8 as described by Franklin and Dyrness, and the Puget Trough region within WRIA 8, as described by Booth et. al, 2003.

This area is generally confined to elevations below 2,000 feet, although this is not a precise elevational break as is evidenced by the fact that Tiger Mountain, which is ecologically in the Puget Lowlands, extends above this elevation. To illustrate this, the area above 2,000 feet in elevation is shown in red on Figure 1. As shown in Figure 1, 1,145 acres of the Tiger Mountain area is above 2,000 feet. The Tiger Mountain summit is included in the proposed service area because ecologically, it is part of the Puget Lowlands in that it is generally below the snow layer, and its hydrology is driven by surface water flows, rather than snow pack.

The proposed service area shares common geology, topography, climate, soils, vegetation, a common drainage boundary to the Puget Sound, and a migratory pathway used by salmonid species in the region. The ecology of the watershed is discussed in greater detail in Section 3.0 of this document.

Section 2.2 Watershed Plans, Local Plans and Policies that Support Restoration of the Keller Farm Site

Restoration of the Keller Farm property will be influenced by its landscape position in the watershed, in the valley floor, at the confluence of two streams, and at the base of the hillside through which Perrigo Creek enters the site. The groundwater upwelling on the site exists because of the geology that underlies the site, and its landscape position with respect to sub-surface and surface hydrologic flows from Bear, Perrigo, and Evans creeks. All of these factors play a role in supporting aquatic resources on site. Site restoration design will take into account the current and historic site conditions, creating a holistic, scientifically based approach to restoration of the site within the context of watershed management goals in WRIA-8. This is reflected by the fact that all of the following regional and local planning documents, going back over the last three decades, specifically identify and support restoration of the proposed bank property:

- 1) **Bear Creek Basin Plan-** Originally written in 1990, based on data going back to the mid 1980's, the Bear Creek Basin Plan was one of the first local watershed plans to take an integrated approach to watershed management. The original document was adopted by the King County Council in 1992, amended in 1995, and formed the beginning of integrated stormwater and

habitat management Basin Planning efforts in King County and throughout the region. It identifies lower Bear Creek – including the bank site, as a ‘Locally Significant Resource Area’ and recommends further study to prioritize habitat restoration projects in this reach.

- 2) **WRIA 8 2005 Puget Sound Salmon Recovery Plan-** Bear Creek is identified as a Core Area in the 2005 Recovery Plan. Restoration of the reach of Bear Creek on which the bank site is located is specifically called out within the 2005 Recovery Plan as a significant salmon recovery near term action anticipated to occur within 10 years of adoption of the Plan (PSSRP, 2005. Volume 1, p.241). Near Term Actions are considered the highest priority actions to aid in salmon recovery.
- 3) **WRIA 8 Work Plans-** The Keller Farm site has been identified as a high priority restoration site in support of Salmon Recovery efforts on every adopted Three Year Work Plan (most recently on the Approved 2014 WRIA 8 Three Year Work Plan) as part of regional salmon recovery efforts. Being listed on the Action Agenda is not a guarantee of funding or implementation, but it does support the regional significance of site restoration.
- 4) **Puget Sound Watershed Characterization Model for WRIA 8-** Identifies the Keller Farm Mitigation Bank site as ‘highest priority restoration’ (Stanley et al, 2011).
- 5) **City of Redmond’s Citywide Watershed Management Plan (Redmond, 2013a)-** Identifies this reach of Bear Creek as Tier 1, Highest Priority Restoration.
- 6) **City of Redmond Planning Documents-** Restoration of the site is consistent with City of Redmond regulations from Comprehensive Plan (Redmond, 2011), to its Parks Plan (Redmond PARCC Plan, 2010), to its Citywide Watershed Management Plan (Redmond, 2013a) to its Water Resources Plan (Redmond, 2013b), to its Shoreline Master Program, and local zoning codes.

Section 2.3 Salmon Recovery Planning in WRIA 8

Land use within the WRIA reflects the urban and urbanizing environment, with relatively high levels of effective impervious area, flashy urban stream flows, high turbidity and stormwater contributions to many stream systems, as well as lack of forest cover, lack of riparian vegetation or connected corridors, and relatively degraded habitat within the urban area. As noted above, 55% of the watershed is within Urban Growth Areas (NWIFC, 2012). The effects of urbanization have resulted in severe impacts to salmon and other species native to the region. In 1999 Chinook salmon were listed as Threatened under the ESA. Since that time, Steelhead in Puget Sound have also been federally listed as ‘Threatened’. A petition to list Lake Sammamish Kokanee under the Endangered Species Act was denied by U.S. Fish and Wildlife Service in 2008, although there is significant interest regionally in Kokanee habitat restoration, with a focus on Lake Sammamish (see Kokanee Blueprint for Restoration and Enhancement of Lake Sammamish Tributaries, Kokanee Work Group, 2014). With respect to the listing of Chinook, and in compliance with the Endangered Species Act, local jurisdictions and stakeholders throughout Puget Sound worked collaboratively to develop salmon conservation plans, which were adopted by NOAA Fisheries in 2005. Each plan is required to identify habitat and limiting factors significant for species recovery. For WRIA 8, the following limiting factors were identified in the Puget Sound Salmon Recovery Plan (PSSRP, 2005):

- Altered hydrology
- Loss of floodplain connectivity
- Lack of riparian vegetation
- Disrupted sediment processes (i.e. too much fine sediment deposited in urban streams, or sources of spawning gravel disconnected from river channel)

- Loss of channel and shoreline complexity (e.g. lack of woody debris and pools)
- Barriers to fish passage
- Degraded water and sediment quality

The Puget Sound Salmon Recovery Plan was developed to address limiting factors and chart a path towards species recovery for Puget Sound Salmon. Each watershed represents a chapter within the Recovery Plan (PSSRP, 2005). It is a science-based document that builds on specific ecosystem objectives all of which are aimed at restoring aquatic habitats, and the driving ecological processes that support salmonid habitat. The following goals have been identified, and each goal is tied to a specific acreage objective. Implementation of the Keller Farm Mitigation bank creates the opportunity to develop a restoration design that contributes to attaining all of the goals identified in the plan. As conceptual design of the bank site moves forward, it would be possible to quantify the percent contribution of restoration of the Keller Farm to each of these goals. At this stage in the project this is premature, and site restoration design will be driven by an analysis of onsite conditions, but it is worth noting that many of the restoration opportunities on site have the potential to significantly contribute to regionally identified watershed restoration goals. Fifty projects located throughout the WRIA have been identified to meet these goals and progress toward each goal is measured on a regular basis:

- **Habitat protection** – “Particular emphasis should be placed on protecting... sources of groundwater and riparian areas to maintain natural hydrologic processes and temperatures that support Chinook”
 - Goal: 2,872 acres
 - Due to its landscape position, the Keller Farm Property contains areas of cold groundwater upwelling; it also contains a significant stretch of riparian area along Bear Creek and Perrigo Creek.
- **Restore wetlands** – “Wetlands act as a biological filter, moderate flows, provide nutrient and invertebrate subsidies to nearby streams, and provide foraging and resting habitats for fish.”
 - Goal: Seven projects; 69 acres
 - Wetland restoration is a primary goal of the Keller Farm Mitigation Bank. Wetland re-establishment on site is likely to be roughly 50 acres. If successful, this would be a significant contribution to overall watershed goals.
- **Floodplain connectivity** – “Protect and restore floodplain connectivity and increase off-channel habitat by minimizing road crossings, reducing channel confinement, and removing floodplain structures. Floodplains provide off-channel habitats, as well as lower velocity areas during periods of high flow.”
 - Goal: 7 projects, 10,085 lineal feet.
 - Implementation of the Keller Farm Mitigation bank is anticipated to restore floodplain connectivity and increase off-channel habitat. Currently, the Keller Farm Mitigation Bank site contains approximately 5800 lineal feet of Bear Creek – nearly half of the goal for the entire watershed.
- **Channel complexity** -- “Add large woody debris to create pools. Channel complexity provides juvenile Chinook with refuge and foraging opportunities while adult Chinook benefit from areas to rest on their upstream migration.”

- Goal: 5.11 miles
 - Restoration of the riparian zone along the Keller Farm Mitigation Bank creates an opportunity to significantly increase channel complexity along Bear Creek and Perrigo Creek as well as create off-channel aquatic habitat throughout the project.
- **Riparian Vegetation** – “Restore riparian vegetation to improve channel stability, provide sources of Large Woody Debris (LWD) that can contribute to the creation of pool habitat and reduce peak water temperatures that favor non-native species.”
 - Goal: 667 acres
 - Riparian vegetation will be significantly increased at the Keller Farm Mitigation Bank site as a result of this project.

2.3.1 Bear Creek Watershed

Bear Creek is a tributary to the Sammamish River, which in turn flows north approximately 11 miles to its confluence with Lake Washington (Figure 1). Bear Creek is a lowland stream system, whose headwaters, located in the Paradise Lake Conservation Area in Snohomish County, retain relatively intact forest cover, and a somewhat rural character, with fewer stream crossings and lower total impervious area than other urbanizing systems, which contributes to higher than average water quality for an urban stream, as evidenced by a population of native freshwater mussels within upper Bear Creek. Freshwater mussels are relatively rare within urban and urbanizing environments and are good indicators of high water quality. Bear Creek, like many of the streams in the Puget Lowlands, relies primarily on groundwater to sustain summer baseflows (Kerwin, 2001). Additionally, Bear Creek supports multiple species and runs of salmonids and has long been identified as an important salmonid bearing stream and “Core Chinook Area”, as described in the 2005 Puget Sound Salmon Recovery Plan. WDFW’s “Salmonscape” stream mapping website lists Chinook, coho, sockeye, steelhead, kokanee, cutthroat and resident trout as fish species present within the reaches of Bear Creek, Evans Creek and Perrigo Creek within the bank site. Kerwin notes that: “The Bear Creek sub-basin represents the most important salmonid bearing system in the Sammamish River geographic area. The Bear Creek drainage basin covers approximately 32,100 acres (50 square miles). Throughout the basin are more than 100 miles of streams, nine (9) lakes, and over 2000 acres of identified wetlands.” (Kerwin, 2001).

2.3.2 Land Cover/Land Use within Bear Creek Watershed

According to the City of Redmond’s Watershed Plan, the Bear Creek Watershed covers approximately 32,100 acres (50 square miles). Of that area, 713 acres occur within the City of Redmond’s jurisdictional limits (Redmond, 2013a). In terms of land cover in the watershed, 9 percent is in forest, 13 percent is in pasture, 25 percent is categorized as ‘landscape’ (this is area that is not effectively impervious) and 53 percent is Effective Impervious Surface (WMP 2013a). In terms of land use, 26 percent of the basin, within City limits, is zoned for commercial development, 14 percent is zoned industrial, 17 percent is roads, 19 percent is zoned single family residential, 9 percent is multi-family residential and 15 percent is parks and undeveloped land (Redmond, 2013a).

A portion of Bear Creek is listed as a Category 4A waterbody for high fecal coliform bacteria concentrations, high temperature, and low dissolved oxygen concentrations (Ecology 2008c as cited in Redmond, 2013a). Generally, the lower portions of Bear Creek are more degraded than the headwater areas (as is reflected in the poor water quality conditions within the lower basin); much of the lower portion of Bear Creek has little to no riparian vegetation, and large woody debris and channel complexity are lacking. Much of the lower portion of Bear Creek is disconnected from its floodplain, and there is little to no off-channel habitat. The riparian vegetation present and dominant within the lower portions of the basin and at the proposed bank site are non-native invasive species, such as blackberry and Reed canarygrass. Despite the dominance of invasive species, there are sparsely scattered alders, Oregon ash, and willow groves along the stream channel within the bank site, as well as occasional cottonwood trees along the fringes of the riparian corridor. Recently, restoration and mitigation projects have focused efforts on the lower reaches of Bear Creek creating improvements that may not yet be realized in collected or available data. Some of these projects are highlighted below.

2.3.3 Connectivity with Other Projects

WSDOT SR-520 Mitigation

In 2013 WSDOT permitted the restoration and enhancement of 30 acres of land to the east of Bear Creek, and north of Evans Creek as mitigation for permitted unavoidable adverse impacts to wetlands and aquatic resources resulting from the construction and expansion of State Route 520. The majority of these permitted impacts were to wetlands and aquatic resources tributary to Lake Washington. Opportunities for on-site mitigation within the SR 520 Corridor are highly constrained, and provide limited functional lift to affected habitats. This site offered the best environmental option by consolidating multiple small impacts at one location, and providing significant functional lift over existing conditions. This mitigation site is immediately east of the proposed bank site, across the Bear Creek channel. The historic channel of Evans Creek was re-created through the WSDOT mitigation site as a part of this project. This project was coordinated with King County, the City of Redmond, and other stakeholders as part of a long-term effort to re-route Evans Creek into its historic channel, which runs east of its current location.

Bear Creek Rehabilitation

Also in 2013, a portion of lower Bear Creek along the north side of SR 520 was rehabilitated. The City's website includes the following project description:

"The Bear Creek Rehabilitation project will rehabilitate the lower, channelized part of Bear Creek starting at the Sammamish River and going upstream on Bear Creek to the Bear Creek enhancement work previously completed. About 3,000 feet of Bear Creek will be completely relocated from the mostly straight, channelized "stream" to a meandering, reshaped and re-planted channel in the existing adjacent open space. The project will establish stream buffers consistent with the City's Critical Areas Ordinance with allowance for the Washington State Department of Transportation (WSDOT) "Stage 3" widening of the SR520 freeway adjacent to Bear Creek. The existing asphalt path will be relocated and augmented with a soft-surface parallel path and "side-routes" that will allow people to walk over to the stream and to view and interact with (a much improved) Bear Creek. The rehabilitated overbank areas will address flood conveyance issues and will provide other habitat improvements." (City of Redmond website, accessed January, 2015).

Other Identified Salmon Habitat Projects in the Project Vicinity

The 2014 WRIA 8 Three Year Work Plan – Capital Project and Program Priorities, listed the following as high priority projects either directly on the bank site (N-208; N-209; N-211; N-212) or in the immediate vicinity of the proposed bank site²:

- North Lake Washington (NLW) Tributaries Riparian Restoration (N-206): Riparian restoration and invasive removal in reach. Sponsored by City of Redmond, listed at \$25,000.00, completion date of 2010 shown).
- Avondale Road to Evans Creek Confluence (Reach 4): N-208 – Evans/Bear Creek Restoration – In-channel restoration through the former dairy farm (Reaches 4 and 5). [This is a direct reference to the Keller Farm Mitigation Bank site].
- Avondale Road to Evans Creek Confluence (Reach 4): N-209 – Install buffer strips to reduce fine sediments (Reaches 4 and 5).
- Evans Creek Confluence to trailer park (Reach 5): N-211 – Evans/Bear Creek Restoration: In-channel restoration through the former dairy farm (spans Reaches 4 and 5). [This is also a direct reference to the Keller Farm Mitigation Bank site].
- Evans Creek Confluence to trailer park (spans Reaches 4 and 5), N-212 – Install buffer strips to reduce fine sediments (spans Reaches 4 and 5).
- Ron Regis Park Acquisition and Protection (N-213): Protect habitat in Reach 4: Protect existing riparian habitat, instream habitat conditions and extensive LWD in reach. Sponsored by King County, \$200,000.00. Completion date of 2013 shown.
- Riparian restoration in Friendly Village (N-214): Adopt-a-stream, City of Redmond, and King County collaborated on a channel enhancement immediately upstream of the bank site project stream reach of Bear Creek in 2012.
- Reduce/Remove Bank Armoring and Restore Riparian Vegetation at NE 95th Street (N-215A): Remove existing bridge abutments and rip-rap, create a more natural channel configuration, and plant native riparian vegetation. Likely date (2017).
- Bear Creek Forest Cover Protection (N-216): Acquire forest property, development rights, conservation easements and provide enhanced incentives to retain and plant forest area environments. This is on on-going effort sponsored by King County.
- Sammamish River Tributary Mouth Restoration (N-339; N-346): Feasibility and design study for each of the tributary mouths in the Sammamish River, including Bear Creek (\$150,000.00 likely sponsor King County, listed as likely end date of 2015). [This is the City of Redmond project referenced above, which was completed in 2015].
- Evans Creek Relocation (N-432A): Relocate Evans Creek to its historic channel, east of its current location. Protect and restore channel complexity, floodplain connectivity; restore riparian vegetation; protect and restore water quality. Sponsored by City of Redmond, 2018.

²The 'N' numbers following each project are designated by the Approved 2014 WRIA 8 Three Year Work Plan.

Numerous other projects, designated as ‘Tier 1’, or highest priority, are listed throughout the Bear Creek watershed, further emphasizing the holistic, watershed-based approach taken by the City and regional salmon recovery partners to achieve salmon recovery goals. It is important to see the proposed bank site as one of many high priority restoration projects which, implemented together, are intended to both support ecological process-based restoration, and thereby to ensure long-term sustainability of the watershed, and the habitats and fish species that it supports.

In addition to the salmon recovery plan, other regional landscape-based decision support tools, such as the Puget Sound Watershed Characterization model, jointly developed by Ecology, WDFW, and the Puget Sound Partnership, were consulted with respect to watershed-based approaches to site selection (Stanley et al, 2011). The Puget Sound Watershed Characterization is a GIS-based model that identifies and prioritizes areas on the landscape that are most suitable for restoration, protection, conservation, or development based on a variety of existing ecological considerations. This model was also consulted by the City of Redmond in the development of their Citywide Watershed Restoration Plan (Redmond, 2013a). The Puget Sound Watershed Characterization model identifies the lower Bear Creek reach as High Priority Restoration area. Restoration of the site as a mitigation bank is consistent with the recommendations from the Puget Sound Watershed Characterization model.

The City’s Watershed Management Plan is a scientifically based approach to prioritizing and protecting the natural resources of the City based on driving ecological processes. As is noted on the City’s web site:

“Redmond values its natural resources, and has completed 45 stream restoration projects, covering 55 acres over the past 15 years. The objective of the projects is to restore habitat (critical areas) to provide the necessary function to support healthy native fish, wildlife and vegetation. Projects examples include: restoring riparian conditions by removing invasive plants and planting native vegetation, removing artificial barriers to fish migration (like undersized culverts), installing large woody debris (LWD) to enhance fish habitat, and re-locating stream channels to more-natural courses.”

It is worth noting that most urban restoration projects are relatively small scale. The Keller Farm Mitigation Bank site presents a rare opportunity to restore a 90+ acre site within an urban growth area. Implementation of this single project presents the opportunity to more than double the acreage of restoration projects that the City has implemented over the last fifteen years, while at the same time making a significant contribution to watershed-wide salmon recovery goals

The Citywide Watershed Management Plan identifies a hierarchical approach to process-based restoration which seeks to prioritize actions to restore driving ecological processes, such as hydrology, followed by restoring ecological structure and function, which leads to habitat restoration. The ultimate goal is to increase stream and riparian biological diversity and sustainability (Redmond, 2013a). However, in order to be most successful, restoration actions must first be focused at restoring driving ecological processes that support the riparian system, such as hydrology. The Citywide Watershed Management Plan presents specific rehabilitation strategies for each surface water within the City’s jurisdiction, by reach. Bear Creek is designated as a Class I stream by the City of Redmond (RZC 21.68), and as a ‘Highest Restoration’ watershed in the Citywide Watershed Management Plan (Redmond, 2013a). The reach of Bear Creek on which the bank site is proposed is identified as Bear Creek (BC) 5 to its confluence with Evans Creek, and BC 4 from its confluence with Evans Creek to Avondale Road. Because the Citywide Watershed Management Plan is intended to guide City management actions, many of the specific rehabilitation strategies are directed at City activities, such as street cleaning, or water quality monitoring activities undertaken by the City. Clearly, these activities are beyond the scope

of a proposed mitigation bank site, although it is important to note that such activities support and contribute to long-term site sustainability. Many of the rehabilitation strategies identified in the Citywide Watershed Management Plan are directly relevant to bank site conceptual design as they will eventually support and sustain process-based restoration at the bank site. Specifically, the Citywide Watershed Management Plan identifies relocating and/or reconnecting Bear Creek, its tributaries, riparian wetlands and floodplain, as well as adding in-stream complexity and restoring buffers on the site (Redmond, 2013a).

2.3.4 Credit Generation and Use of the Keller Farm Mitigation Bank in WRIA 8

Given the United States policy goal of “no net loss³” for wetland habitats, it is important to note that restoration of the Keller Farm Mitigation Bank site will create a net increase in both wetland area and function within the WRIA, even after all credits have been debited for use on the project. This is because the majority of restoration actions on site are anticipated to be wetland creation, re-establishment or rehabilitation rather than the enhancement actions which typically are the only mitigation option available in an urban setting. This is a significant point, given the constraints in the watershed with respect to mitigation opportunities, which often do not increase wetland size or aquatic resource area, or, significantly increase the level of function that the existing aquatic areas are providing in the watershed. Furthermore, because of the lack of available mitigation opportunity for other critical areas, it is likely that the increase in wetland area and stream function may be used to offset other impacts such as those to wetland or stream buffers, as required by local codes and policies. If this occurs, it would further support a net gain in wetland and aquatic resource acreage and function, in compliance with federal, state, and local policies.

Use of the Keller Farm Mitigation Bank within the proposed service area is never guaranteed and it is critical to point out that mitigation sequencing of avoidance and minimization of all potential impacts, as always, must be followed prior to an approval to use the mitigation bank. Currently, a number of local jurisdictions within the watershed, including the City of Redmond, do not allow for mitigation to occur out of their jurisdictional boundary, even if those mitigation actions are located in the WRIA based upon improving limiting factors using a watershed approach. This means that the proposed service area as is may be effectively smaller than its physical area if there are no changes to these policy limitations or if local jurisdiction code is not updated or interpreted to allow use of the bank.

Furthermore, there are other programmatic mitigation options available within the proposed service area. For example, King County operates the King County In-Lieu Fee Mitigation Program. In addition, the Springbrook Creek Mitigation bank has an approved service area that includes portions of WRIs 8 and 9. These projects were established to provide other alternatives to permittee responsible mitigation as the need was recognized by other state and local agencies. By providing another alternative within the WRIA, more options will be available for applicants to offset permitted impacts to wetlands and aquatic resources.

Section 3.0 Watershed Ecology

Section 3.1 Recent Geologic Influences on the Puget Sound Lowlands

³ Executive Order 11990, May 1977, 42 Federal Register 26961

The Lake Washington/Cedar/Sammamish watershed occurs primarily within the Puget Lowlands, an area that was formed by glaciation of the Vashon stade, which covered the Seattle area with an ice sheet up to a mile thick until approximately 18,000 to 15,000 years ago (as cited in Booth et al, 2003). The Puget Lowland formation follows a defined topographic pattern which has been classified as moving from the rocky alpine headwaters, following a steep descent into confined mountain valleys, and emerging into broad low-gradient lowland valleys where the channels are walled by unconsolidated fluvial sediments (Booth et al, 2003, Montgomery and Buffington, 1997). The underlying geology influences local hydrology and sediment transport, which establish local hydrologic conditions, including surface and sub-surface hydrology. According to Kerwin, 86% of WRIA 8 is within the Puget Lowlands, while 14% lies within the Cascade region (Kerwin, 2001). This area roughly corresponds with a 2,000 foot elevation, as shown in red on Figure 1. The proposed service area for the Keller Farm Mitigation Bank includes all of the area within the Puget Lowlands within WRIA 8, and excludes the Cascade region, because it is geologically distinct from the Puget Lowlands. It also excludes that portion of the Puget Lowlands located within the City of Seattle's Cedar River watershed, upstream of Landsburg Dam (Figure 1). The area of Puget Lowlands within the City of Seattle's Cedar River watershed encompasses roughly 22,500 acres.

Many of the tributaries within the Lake Washington/Cedar/Sammamish watershed share similar topography, and their ecological characteristics have been shaped by similar driving ecological processes (geology, which created pathways for surface and sub-surface water flows) resulting in similar ecological structure and function of riparian lowland forests, streams, and wetlands. In his discussion of the geology of Bear Creek in the 1990 Bear Creek Basin Plan, Booth notes: "The threshold of bank erosion is remarkably similar to that determined for mainstem channels in the Soos Creek Basin, ... about 30 miles south, and in generally equivalent geologic and vegetative settings." (Bear Creek Basin Plan, 1990. P 95). Uniquely, WRIA 8 is the only major watershed tributary to Puget Sound that contains two major lake systems, Lake Washington and Lake Sammamish. As stated by Kerwin: "The division of the watershed by its topography and its two major lakes gives it ecological complexities not found in watersheds based on major rivers." (Kerwin, 2001). These lake systems are linked hydrologically, with 55% of the mean annual inflow to Lake Washington from the Cedar River, while 27% of the mean annual inflow to Lake Washington is from Lake Sammamish (Kerwin, 2001). With the exception of the Cedar River, all of the headwaters within the Puget Lowland stream systems within WRIA 8 receive their primary source of hydrology from groundwater and precipitation, rather than from snowmelt (Kerwin, 2001).

Section 3.2 Soil and Vegetation Classifications found in the Puget Lowlands and WRIA 8

The Puget Lowlands within WRIA 8 are unified by a common geologic origin, and further defined by common topography, climate, soils, and hydrologic flow characteristics which have led to the establishment of similar vegetation types as characterized by Franklin and Dyrness (1973), and with respect to wetlands, by Kunze (1994) and Rocchio and Crawford (2009).

Franklin and Dyrness note that the northern Puget Sound drainages were formed under glaciation of the Vashon stade, and share similar topography and soil conditions. The terminal moraine of the Vashon glacier reached just south of modern day Olympia, roughly to Toledo. Within the moraine, the area coined as 'the Puget Lowlands' drains gently towards the Puget Sound, and contains many lakes and poorly drained depressions underlain by glacial drift. The region is subject to a wet, mild, maritime

climate. Elevationally, this zone ranges from sea level to 600 or 700 meters (1968 feet to 2297 feet⁴) at 49 degrees north latitude, and from 150 to 1000 meters (492 feet to 3281 feet) at 45 degrees north latitude. (Franklin and Dyrness, 1973, p. 71). The soils in this region have been formed by coniferous forests over glacial materials (Franklin and Dyrness, 1973, 1988). Franklin and Dyrness note: "The Puget lowlands may be recognized as a separate vegetative zone...." Vegetation within this zone is part of the *Tsuga heterophylla* (western hemlock) zone, which is characterized by coniferous forests composed of mixed stands of western hemlock, western red cedar, and douglas fir (Franklin and Dyrness, 1973). Groundcover within the forest is comprised of a dense shrub and herbaceous layer of sword fern, bracken fern, salal, Oregon grape, oceanspray, blackberry, red huckleberry and red elderberry. Forested wetlands within this zone are likely to be dominated by either western red cedar or red alder, although spruce and hemlock may also be present. The understory of the wetlands may be dominated by skunk cabbage or slough sedge (*Carex obnupta*), but is also likely to comprise "a great variety of shrubby and herbaceous species....Some of the more characteristic are *Blechnum spicant*, *Athyrium felix-femina*, *Oenanthe sarmentosa*, *Stachys Mexicana*, *Mitella* spp. *Tolmeia menziesii*, *Spiraea douglasii*, *Salix hookeriana*, and *Rubus spectabilis*." (Franklin and Dyrness, 1973, p. 68).

The current condition of the Keller Farm Mitigation Bank site makes identification and classification of historic vegetation community types somewhat speculative, given that the site has been maintained for agriculture over the last hundred years. However, it is likely, given its landscape position (along the riparian zone, lower gradient, at the confluence of Bear and Evans Creeks), as well as General Land Office Vegetation Survey data from the late 1800's, that the site historically contained a dynamic mix of palustrine forested and riverine wetland community types (Cowardin, 1979).

It is likely that the site historically would have met the criteria for a minerotrophic wetland community of the *Thuja plicata*/*Tsuga heterophylla*/*Lysichitum americanum* community type, although the *Alnus rubra*/*Rubus spectabilis* community type, in that it is riparian, is likely to also have been historically present (Kunze, 1994). Of the *Thuja plicata*/*Tsuga heterophylla*/*Lysichitum americanum* community type, Kunze notes: "This community type was once found throughout the northern Puget Trough lowlands, but there are very few remaining undisturbed examples. It occurs on flat ground, in depressions, in floodplains, and in association with small streams and seeps. Soils have a high organic content, either muck or peat. Fallen trees and upturned rootwads provide a substrate elevated above the soil surface. The water level varies between being at, to slightly below the soil surface, and often there is standing water" (Kunze, 1994, p. 34).

Washington State's Ecological systems have also been classified by the Washington Department of Natural Resources (Rocchio and Crawford, 2009). Per this classification system, the Keller Farm Mitigation Bank Site meets the definition for "North Pacific Lowland Riparian Forest and Shrubland". These systems occur on low elevation alluvial floodplains, along the banks of riparian areas, and overbank flow is an important driver of ecological conditions. They are confined by valleys and inlets, or lower terraces of rivers or streams. Major broadleaf dominant species are *Acer macrophyllum*, *Alnus rubra*, *Populus balsamifera*, var. *trichocarpa*, *Salix sitchensis*, *Salix lucida*, spp. *lasianдра*, and *Fraxinus latifolia*. Conifers such as *Abies grandis*, *Picea sitchensis* and *Thuja plicata* tend to increase with succession in the absence of major disturbance. Early successional stages can be sparsely vegetated or dominated by herbaceous vegetation. Flooding events are the primary ecological driver for this system (Rocchio and Crawford, 2009. p 153).

⁴ This zone encompasses a range of elevations. To estimate the area within the Puget Lowlands, the elevation of 2,000' was used as roughly corresponding to the elevational break. The area of WRIA 8 above 2,000 feet in elevation is shown on Figure 1.

Soils on the Keller Farm Mitigation Bank site are predominantly Puget silty clay loam, a poorly drained soil formed in recent alluvium which dominates the central portion of the site, and Sultan silt loam, which borders the site along the current riparian zone, and is an alluvial soil that NRCS classifies as moderately well drained (See Figure 2) (NRCS, Soil Survey for King County, Washington, accessed on line 12/1/15). The fact that both of these soils are formed in riparian zones supports the speculation that historic wetlands on site were likely a dynamic mosaic of riparian and palustrine forested wetland in the active floodplain, which transitioned to upland forest as it moved away from the active riparian edge. The wetlands were likely confined primarily to the valley floor. While such wetlands have largely been disturbed in the urban setting which currently surrounds the site, they nonetheless remain a relatively common wetland type within the region. Restoration of this wetland area is therefore well suited to a wetland mitigation bank in that it can adequately compensate for a wide variety of permitted wetland impacts within the region.

Section 3.3 Salmonid Species within WRIA 8

This discussion is based on a summary from Kerwin, 2001, which formed the basis of technical recommendations that informed the Chinook Salmon Recovery Plan of 2005. While information on specific stocks has been updated since this time, this is the most thorough overview of conditions of the watershed with respect to salmon that exists, and it provides a good overview of the stocks which use the watershed, the habitats that they prefer, their life history stages, as well as limiting factors which affect the survival of those stocks. While the focus is on Chinook, all salmonid species are covered.

From 1968-1997 the average Chinook run in the Cedar-Sammamish system, as recorded by Kerwin, was 9,600 fish, but between 1992-2001 this dropped to less than 550 naturally produced Chinook within the system (Kerwin, 2001). Between 1980-1999 the average yearly run of Coho in the system was 8,058 fish, but spawners ranged between 399 – 20,002 during this same timeframe. Kerwin reports that the Cedar-Sammamish Winter Steelhead stock as ‘depressed’; Sockeye in both the Cedar and Lake Washington, including the beach spawning Sockeye in Lake Washington were depressed at the time of his report (Kerwin, 2001). Kokanee in the system include an early run of Kokanee that return to Issaquah Creek, which are considered native, while there is another sub-species of Kokanee that returns to the South Lake Sammamish Tributaries (Laughing Jacobs Creek, Ebright Creek, and Lewis Creek), which is considered genetically distinct from the Issaquah Creek Kokanee. At the time of Kerwin’s report, there was also thought to be a distinct Kokanee run in Bear Creek (Kerwin, 2001). The Kokanee Work Group represents a coalition of partners interested in restoring and enhancing Kokanee habitat on Lake Sammamish and its immediate tributaries. The genetic origins of the Bear Creek Kokanee, and Sammamish River tributary kokanee generally are unclear (Lake Sammamish Kokanee Work Group, 2014). The Bear Creek kokanee are identified as a middle run stock, but are not the focus of the Kokanee Work Group efforts (Lake Sammamish Kokanee Work Group, 2014).

More recent data for Bear Creek shows the following adult returns as documented by volunteer Salmon Watchers with support from King County (King County, 2015). Volunteers observed the following salmonid species in Bear Creek during 2014: 44 Chinook, 2 Coho, 487 Sockeye and 8 unidentified adult returns (King County, 2015). Percentage-wise, these numbers roughly parallel the proportion of salmonids seen by volunteers throughout the Lake Washington watershed during 2014:

- 78.3% of all fish recorded were sockeye
- 8.16% were chinook
- 4.60% were coho

- 3.62% were kokanee
- .54% were trout
(King County, 2015)

Other salmonids in the watershed which are not addressed in detail in this report include rainbow trout (either juvenile steelhead or hatchery origin, both of which occur in the watershed), coastal cutthroat trout, and native char. Coastal cutthroat have been documented in Bear Creek.

Chinook

Lake Washington/Cedar/Sammamish Chinook first arrive at the Ballard Locks in mid-June, with runs peaking in mid to late August and generally concluding by the end of November. Juvenile chinook are believed to incubate in the gravel until late January or early February, with emergence being complete by March. Juvenile out-migration is expected to take several months, but is likely concluded through the Locks by mid-August (Kerwin, 2001). Typically, the Lake Washington basin summer/fall chinook migrate to the Puget Sound within the first year of their life, although some may remain within the freshwater system for an additional year (Kerwin, 2001). Lake Washington chinook use the Cedar River, Issaquah Creek, the Bear/Cottage Lake system, with smaller numbers using streams such as Kelsey, Little Bear, North, Swamp, May, Lewis, McAleer, and Thornton creeks. The extent to which adult chinook utilize other creeks is not completely known in all instances.... In 1999, significant numbers of live adult chinook and redds were located in Kelsey Creek and the Cottage/Bear Creek system. The Cottage/Bear Creek system has seen increases in escapement for the previous three years (1998-2000). Lake Washington Basin summer/fall chinook spawn from mid-September into late November (Kerwin, 2001).

“Chinook spawning begins in the tributary streams in mid-September peaks around October 6-10 and continues through mid-November. Emergence from spawning nests is dependent on water temperatures but begins in January of the year following egg deposition and is typically completed by March. The summer/fall chinook in WRIA 8 are typically an “ocean” type. “Ocean” type chinook are characterized by a rearing trajectory in that they rear in their natal freshwater environment for one to four months prior to their seaward migration. A major difference in the Lake Washington Basin chinook from other Puget Sound stocks of chinook is that all the chinook juveniles must enter, rear for some period of time, and migrate through a large lake system. The distribution, population, diet, growth rates and survival of juvenile chinook that enter Lake Washington is not fully understood. Many of the studies of juvenile salmonids in Lake Washington have focused on sockeye salmon but some information about chinook has also been collected as a part of these studies. Collectively known as The Lake Washington Ecological Studies, data collected during these studies suggests that juvenile chinook utilize the littoral zone of Lake Washington for rearing. During sampling in 1994, 1995, 1997 and 1998 small numbers of juvenile chinook were consistently caught, in the littoral zone, with catches increasing through late May.” (Kerwin, 2001).

Coho

“The onset of coho salmon spawning is tied to the first significant fall freshet. Lake Washington Basin coho stocks typically enter fresh water from August to early December.

They often mill near the river and creek mouths or in lower river pools until the fall freshets occur. Spawning usually occurs between November and early December, but is sometimes as early as mid-October and typically occurs in tributary streams. High stormwater flows and sedimentation in the tributaries can suffocate eggs. As chinook salmon fry exit the shallow low-velocity rearing areas, coho fry, which emerge from the gravel later than chinook, utilizes those same areas for the same purpose. As they grow, juvenile coho move into faster water and disperse into tributaries and areas which adults cannot access. Pool habitat is important not only for returning adults, but also for all stages of juvenile development. Preferred pool habitat includes deep pools with riparian cover and woody debris in the form of individual pieces to debris jams.

The Lake Washington Basin coho juveniles remain in freshwater for a full year after leaving the gravel nests, but during the summer after early rearing, low flows can lead to problems such as a physical reduction in available habitat, increased stranding, decreased dissolved oxygen, increased temperature, and increased predation. Juvenile coho are highly territorial and can occupy the same area for long periods of time.” (Kerwin, 2001).

To summarize Kerwin’s findings, coho abundance can be limited by the availability of suitable territory. Coho are more abundant in streams with a higher percentage of structure (logs, undercut banks, overhanging vegetation) because those habitats provide both more available territory for use and more food and cover.

“Large wood also assists in the retention of salmon carcasses by adding habitat complexity in the form of pools where these carcasses may settle out and add nutrients for stream productivity. There is a positive correlation between juvenile coho’s primary diet of insect material in stomachs and the extent the stream was overgrown with vegetation.... In addition, the leaf litter in the fall contributes to macroinvertebrate and aquatic insect production.... In the autumn as the water temperatures decrease, the juvenile coho move into deeper pools, hide under submerged logs, overhanging and submerged tree roots, and undercut banks.... The fall freshets redistribute them ..., and the preferred habitats for overwintering juvenile coho generally occurs in available side channels, spring-fed ponds, and other off-channel sites to avoid high stream velocities associated with winter floods.... Cederholm and Scarlett (1981) [as cited in Kerwin, 2001] found that a lack of side channels and small streams may limit coho survival. As coho juveniles grow into yearlings, they tend to become more predatory on other salmonids. Lake Washington Basin origin coho begin to leave the basin over a year after emerging from their gravel nests with the peak outmigration occurring in early May. Outmigrating coho use the Salmon Bay estuary primarily for interim feeding while they adjust physiologically to saltwater.” (Kerwin, 2001).

As compared to chinook, coho in the system spawn later and emerge later in the season. In terms of habitat for juveniles, pool habitat is important to juvenile coho. They prefer deeper pools, with riparian cover and abundant in-stream structure, including large woody debris, and undercut banks. Coho remain in freshwater for up to a year following emergence, and use side-channels and spring-fed ponds in the winter to avoid heavy winter flows.

Sockeye

Lake Washington sockeye are found entering the Chittenden Locks as early as mid-May and

continue through early November in some years (Goetz 2000 [as cited in Kerwin, 2001]). Sockeye spawning in the Lake Washington Basin occurs in the Cedar River, tributaries to Lake Washington and Sammamish and along specific beaches in Lake Washington. In the Cedar River, sockeye spawn in the mainstem river channel, in side channels and spring-fed ponds. The spawning beaches along Lake Washington provide a unique habitat that is often altered by human activities, such as pier and dock construction, dredging, sedimentation, and weed control. Timing of sockeye spawning ranges from September through January.

After fry emerge from the gravel, Lake Washington sockeye migrate to a lake for rearing. Lake rearing of juvenile sockeye ranges from one to three years with most juveniles rearing two years. In the spring after lake rearing is completed, juveniles enter the Puget Sound and then the ocean where more growth occurs prior to adult return for spawning (Based on Kerwin, 2001).

For all juvenile salmonids: *"After the young salmonid fry emerge from the gravel nests (redds), certain species such as chum, pink, and some chinook salmon quickly migrate downstream to the estuary. Other species, such as coho, steelhead, bull trout, cutthroat, sockeye and chinook, will search for suitable rearing habitat within the side sloughs and channels, tributaries, and spring-fed "seep" areas, as well as the outer edges of the stream and in some instances lakes (sockeye). These quiet-water side margins and off channel slough areas are vital for early juvenile rearing habitats. The presence of woody debris and overhead cover aid in food and nutrient inputs, provide localized areas of reduced water velocities for energy conservation as well as provide protection from predators. For most of these species, juveniles use this type of habitat in the spring. Most sockeye populations migrate from their gravel nests quickly to larger lake environments where they have unique habitat requirements."* (Kerwin, 2001, page 71)

"As growth continues, the juvenile salmon (parr) move away from the quiet shallow areas to deeper, faster areas of the stream. The species that exhibit this behavior include coho, steelhead, bulltrout, and certain chinook. For some of these species, this movement is coincident with the summer low flows. Low flows typically limit salmon production for stocks that rear during summer within the stream. In non-glacial streams, precipitation, melting snow packs, connectivity to wetland discharges, and groundwater maintain summer flow inputs. Reductions in these inputs will reduce that amount of habitat; hence the number of salmon which are dependent on adequate summer flows are reduced.

In the fall, juvenile salmon that remain in freshwater begin to move out of the mainstems, and again, off-channel habitat becomes important. During the winter, coho, steelhead, bull trout, cutthroat and any remaining chinook parr require off-channel habitats to sustain their growth and protect them from predators and high winter flows. Wetlands, off-channel/side channel stream habitat protected from the effects of high flows, and pools with overhead cover are important habitat components during this time.

Except for resident bull trout, cutthroat and steelhead (rainbow), juvenile parrs convert to smolts as they migrate downstream towards the estuary. Again, flows are critical, and food and shelter are necessary. The natural flow regime in each river is unique, and has shaped the stock's characteristics through adaptation over the last 10,000 years. Because of the close inter-relationship between a salmon stock and its stream, survival of the stock depends heavily on natural flow patterns."

"All salmonid species need adequate flow and water quality, spawning riffles and pools, a functional riparian zone, and upland conditions that favor stability. However, some of these

specific needs vary by species, such as preferred spawning areas and gravel. Although some overlap occurs, different salmon species and/or stocks of the same species within a river are often staggered in their use of a particular type of habitat. Some are staggered in time, and others are separated by distance. During these times, low flows and associated high temperatures and low dissolved oxygen can be problems. Other disrupted habitat components such as less frequent and shallower pools caused by sediment inputs as well as a lack of canopy from an altered riparian zone or widened river channel can worsen these flows and water quality.” (Kerwin, 2001).

Kerwin concludes:

“... all of the salmonid species have similar general habitat needs such as unimpeded access to spawning habitat, a stable incubation environment, favorable downstream migration conditions (adequate flows in the spring), and a healthy estuarine environment.” (Kerwin, 2001).

Kerwin’s findings formed the basis for the habitat restoration goals presented in the Chinook Salmon Recovery Plan in 2005, and adopted by NOAA Fisheries in 2007, for the recovery of Chinook Salmon. While Chinook were the only species listed under the Endangered Species Act in 1999, the Recovery Plan took a multi-species approach, and is premised on the assumption that what is beneficial for Chinook habitat is beneficial for all salmonid habitat.

It is a primary goal of the Keller Farm Mitigation Bank to provide restored wetlands and improved riparian conditions on site. Off-channel rearing and refuge may also be a significant component of site restoration. Currently the Keller Farm Mitigation Bank site is primarily used as a migratory pathway for returning adult spawners who pass through Bear Creek on their way upstream to spawn. Due to the degraded conditions of the riparian zone along the reach of Bear Creek, limited spawning occurs in this reach. Use of the ditches on site by juvenile salmonids is presumed but unknown at this time. Restoration of the Keller Farm Mitigation Bank site offers an opportunity to significantly enhance existing riparian conditions and functions, as well as to establish significant off-channel rearing and refuge habitat for juvenile salmonids.

Section 4.0 Summary of Service Area Rationale for the Keller Farm Mitigation Bank

This document provides a technical basis for the inclusion of similarly defined portions of WRIA 8 into the aquatic resource service area for the Keller Farm Mitigation Bank. The proposed service area boundary for aquatic resources is in compliance with federal, state, and local rules. Habitat Bank, LLC has proposed that portion of WRIA 8, within the Puget Lowlands, (as shown on Figure 1), and excluding the area within the City of Seattle’s Cedar River Watershed as an appropriate and ecologically defensible service area boundary for the Keller Farm Mitigation Bank site. Following the same federal, state and local rules dictating mitigation policy, it is important to note that having a project within a bank’s service area does not guarantee the use of the mitigation bank as each project is evaluated on a case-by-case basis and must first avoid and minimize any impact and then make a case that the mitigation bank provides the most ecologically appropriate form of mitigation for the project’s impacts.

The proposed service area represents approximately 74% of WRIA 8. The portion excluded from the service area is largely excluded because it is in the Cascade Crest ecological zone, and its hydrologic

processes are therefore rain-on-snow driven, rather than dominated by surface and groundwater flows, as are the flows in the rest of the watershed. This break also corresponds roughly to the break between the Cascade Crest and the Puget Lowlands; the requested service area falls wholly within the Puget Lowlands. As such, it is an area defined by similar geology, topography and climatic conditions. These conditions lead to the establishment of similar habitat and vegetation types, which support similar species. The entire watershed is unified by common hydrologic flow, which is recognized as the most important factor in the ecological processes that create and sustain aquatic habitats. Wetlands and riparian areas to be restored at the Keller Farm Mitigation Bank site are also representative of stream and wetland conditions throughout the Puget Lowlands and within WRIA 8.

Other programmatic mitigation programs in the proposed service area include King County's In-Lieu Fee Program, as well as the Springbrook Creek Mitigation Bank, located in the City of Renton, within WRIA 9, whose service area also includes portions of WRIA 8 and the Cedar River watershed west of Highway 18. From a hydrologic perspective, the Keller Farm Mitigation Bank is located within the same watershed as the Cedar River, and unlike the Springbrook Creek Mitigation Bank service area, is connected to the Cedar River by common hydrologic flows. Establishing the Keller Farm Mitigation Bank with a service area of the Puget Lowlands within WRIA 8 will provide more opportunities for applicants to meet mitigation requirements within the region.

The Keller Farm Mitigation Bank site has been identified as a high priority restoration site in every watershed plan developed for the area for the last three decades. Restoration of the site is consistent with the City of Redmond's Comprehensive Plan (Redmond, 2011), PARCC Plan (Redmond, 2010), Citywide Watershed Management Plan (Redmond, 2013a), Water Resources Plan (Redmond, 2013b), as well as its critical areas ordinance, fish and wildlife habitat conservation areas ordinance, Shoreline Master Program, and local zoning codes. Site restoration is consistent with the Puget Sound Watershed Characterization model, and regional salmon recovery efforts as expressed in the 2005 Puget Sound Salmon Recovery Plan, as well as every WRIA 8 Three-Year Habitat Work Schedule developed to implement salmon recovery in the region since Chinook were listed in 1999.

Finally, while the primary basis for the service area determination is shared ecological conditions, economic considerations are an important secondary point of consideration in order for a policy which relies on private sector investment to succeed. As a public-private partnership, this project is also consistent with the 2015 Presidential Memorandum "Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment" (Presidential MOA, 2015). The service area as proposed, provides enough certainty to the project sponsor that the project can be economically sustainable, which is critical to the success of the banking program and continued development of bank projects in our region. Conversely, a service area that is too small and not economically viable defeats the purpose of the federal and state rules that prioritize bank projects and support their development.

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June 2, 2020

Habitat Bank Response to: "Sno-King Watershed Council" and "Pilchuck Audubon Society" Letter to Snohomish County Planning and Development Services, dated May 29, 2020

RE: Use of Keller Farm Mitigation Bank for Projects in Snohomish County

Habitat Bank has reviewed the above referenced letter. We appreciate the common desire to protect our local natural and aquatic resources in the Lake Washington-Lake Sammamish Watershed. However, we find the positions and statements in this letter indicate a general lack of understanding about how aquatic resource mitigation policies work to adequately compensate for unavoidable impacts from development. There are multiple statements that are not factually accurate, confuse different regulatory processes and don't recognize the long history of multi-agency coordination to establish how banks are reviewed, approved and regulated. Additionally, the approach to aquatic resource mitigation that is presented in this letter is not supported by current best available science in watershed planning documents or Federal, State and local regulatory rules and guidance documents. Current aquatic resource mitigation policies have established a very high bar for implementing successful mitigation projects. Local watershed groups and stakeholders can be very effective improving our local watersheds and working on small distributed projects but they may not understand that creating significant, sustainable and ecologically defensible wetland mitigation projects at a small often disconnected scale has been found to be unsuccessful in many scenarios. Simply put, there is little opportunity on small patchwork mitigation sites to "create" or "reestablish" wetland hydrology and a diversity of sustainable wetland habitat types. Often these projects are at best "wetland enhancement" actions that don't actually meet no "net-loss" standards for wetland area and function.

Use of the Keller Farm Mitigation Bank within the proposed service area is never guaranteed and it is important to point out that mitigation sequencing of avoidance and minimization of all potential impacts, as always, must be followed prior to an approval to use the mitigation bank. However, the reality is that viable mitigation opportunities are extremely limited in this urban WRIA and public infrastructure projects in Snohomish County as well as private development projects need high-quality mitigation options after all avoidance measures have been utilized. The option to use a mitigation bank gives applicants with unavoidable aquatic and critical area impacts another tool to improve the efficiency and effectiveness of their mitigation plans and often reduce their project costs and liabilities.

The Service Area for the Keller Farm Mitigation Bank is unified by common hydrologic flow, common geology, climate, topography, soils, vegetation communities, and habitat types. Most of the service area rationale for the Keller Farm Mitigation Bank can be found in its "Aquatic Resources Rationale Document" which is included below for general information and reference. The establishment and use of mitigation banks is a preferred option and alternative under federal and State regulations, as outlined in sections of the Aquatic Resource Rationale Document.

Habitat Bank has worked to provide high-quality wetland and critical areas mitigation options for projects in Snohomish County over the last 15 years. The Keller Farm Mitigation Bank Project is another valuable tool for such circumstances. Below are our responses to sections of this letter broken down by page and paragraph number:

Comment Letter Page 1.

PP1:

- Mitigation Banks are large-scale regionally significant restoration projects that seek to restore the limiting factors within a watershed. Mitigation bank service areas in Washington State are often the entirety of the “WRIA “of which they are located. The Keller Farm Mitigation Bank’s Service Area is geographically only approximately half of WRIA-8 and does not include the small drainage basins that feed directly into Puget Sound, the entirety of the Cedar River Watershed and the areas west of Lake Washington (roughly the City of Seattle). The geographical service area boundary was determined by the regulatory agencies reviewing and approving the bank with significant input from the Muckleshoot Indian Tribe Fisheries Division. WRIA-8 is the most developed and populous watershed in the state, with 27 jurisdictions and over 1.4 million inhabitants (NWIFC, 2012). Over 55% of the WRIA is within Urban Growth Boundaries. Mitigation opportunities are very limited across the watershed and the Keller Farm Mitigation Bank provides an opportunity to establish a relatively large, ecologically successful mitigation site within the urban growth area that can contribute to regional restoration goals identified for WRIA 8.

PP 2:

- The US Army Corps of Engineers (USACE), WA Dept. of Ecology (Ecology) or Snohomish County do not use “Threshold Discharge Area” as a basis for determining ecologically appropriate compensatory mitigation for wetlands and other aquatic and critical areas. There are numerous studies and guidance documents published jointly by Ecology, the USACE and US EPA on implementing a watershed approach to locating wetland and aquatic area mitigation. A mitigation bank must follow these guidance documents to develop a service area. “Stormwater” and stormwater regulations may be confused or comingled in this letter with aquatic and critical areas regulations; however, they are separate processes. Projects with impacts to wetlands must also meet separate stormwater requirements and regulations in addition to critical areas regulations.

PP 3:

- The Keller Farm Mitigation Banking Instrument clearly documents the type and quality of restoration on the bank project, the functions the wetlands are expected to provide when restored and the improvements in processes to the overall watershed that these wetlands will provide. Based on the comments in this letter it does not seem that the commenters have read the Keller Farm MBI.
- A bank project’s implementation and management is extremely capital intensive and rigorous. Credits are only released if the project can prove through the review of monitoring reports and other required submittals that the project has created the ecological value to release those

corresponding credit values for use by permit applicants. The cost of credits from the bank is therefore not “cheap” and the regulatory process that applicants must go through to permit an unavoidable wetland or critical area buffer impact is not “easy”.

- In general, wetlands located on private property are not accessible to the public. Wetlands located in parks or in other public places may be accessible but would not likely be impacted by development if they were already protected in a park setting.
- As pointed out in this letter, amphibians require wetlands and other aquatic habitats for breeding and egg laying and also require upland areas for overwintering. Historically on-site wetland mitigation in urban areas has resulted in a disconnected patchwork of smaller mitigation projects that are hydrologically isolated from each other by development. Unfortunately, these types of mitigation projects cannot support the life stage requirements that amphibians need. Mitigation Banks are often more effective in amphibian habitat restoration because they can sustain amphibian populations due to their size and diversity of habitat types and their interconnectivity to other habitat areas that may surround them. The KFMB includes a variety of diverse habitat types and is connected to large upland patch habitats that support amphibians. The KFMB is currently being studied for its value to amphibians through a grant from the Woodland Park Zoo. This is in part because other mitigation bank projects such as the “Snohomish Basin Mitigation Bank” have been highly successful in restoring amphibian habitat in Puget Sound.
- The 5-year permitting and certification process of the Keller Farm Bank included multiple studies and reports reviewed and approved by agencies and stakeholders including the USACE, Department of Ecology, US EPA, Washington State Department of Fish and Wildlife, NOAA Fisheries and Muckleshoot Indian Tribe Fisheries Division, in order to document the “functional lift” for wetlands and other aquatic areas provided by the bank and the extent of the service area where those ecological values could be utilized. Credits from the Keller Farm Mitigation Bank represent a majority of “wetland reestablishment” which simply cannot be done at a small scale.

Comment Letter Page 2

PP 2 and 3:

- The KFMB is not an “Endangered Species Salmon Conservation Bank” rather a wetland and critical areas mitigation bank. While these habitats and species often interact, there are separate regulations, regulating them. While the KFMB does provide significant fish habitat improvements and is creating new and additional stream habitat and connectivity for Endangered Chinook Salmon and other anadromous and resident fish species, it is not specifically “mitigating” for these impacts under the Endangered Species Act. Therefore, the value of fish habitat restoration is contained within the value of the wetlands being restored at the KFMB and only serve to increase the habitat value for anadromous fish in the wetlands and stream habitat in the project and to the watershed as a whole. If development projects have direct impacts to ESA species or other state species of concern, they must mitigate for them separately, most often on site, or eliminate those impacts altogether in the project.

PP 4:

- The concept of locating wetland mitigation ¼ mile away from an impact location is not current “best available science” and does not align with federal or state guidance in siting wetland mitigation sites using a watershed approach. In this portion of Snohomish County the concept would be absolutely impractical but this may be why the commenters are proposing such a standard.

PP 5:

- The statements in this paragraph do not follow the reality of the Keller Farm Mitigation Bank Service Area as established. The KFMB Service Area is clearly documented as being geographically distinct portions of WRIA-8 that do not include small drainage basins that drain directly into Puget Sound, the Cedar River Watershed or any area west of Lake Washington (City of Seattle).

PP 5 and 6:

- These statements seem to reference stormwater detention which is not directly part of wetland mitigation regulations. Current land use regulations require hydrology impacts and stormwater to be mitigated or accounted for on site so this is a function each applicant will deal with on site and will not be mitigated for at the KFMB.






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